



*Brother Laser Printer*

# ***HL-1650/1670N***

***USER'S GUIDE***

Please read this manual thoroughly before using the printer. You can print or view this manual from the CD-ROM at any time, please keep the CD-ROM in a convenient place for quick and easy reference at all times.



Laser Printer

# HL-1650/1670N

## USER'S GUIDE

### (For USA & CANADA Only)

**IMPORTANT NOTE:** For technical and operational assistance, you must call.  
Calls must be made **from within** that country.

In USA 1-800-276-7746

In CANADA 1-800-853-6660  
1-514-685-6464 (within Montreal)

#### If you have comments or suggestions, please write us at:

In USA Printer Customer Support  
Brother International Corporation  
15 Musick  
Irvine, CA 92618

In CANADA Brother International Corporation (Canada), Ltd.  
- Marketing Dept.  
1, rue Hôtel de Ville  
Dollard-des-Ormeaux, PQ, Canada H9B 3H6

#### BROTHER FAX-BACK SYSTEM

Brother Customer Service has installed an easy to use fax-back system so you can get instant answers to common technical questions and product information for all Brother products. This is available 24 hours a day, 7 days a week. You can use the system to send the information to any fax machine, not just the one from which you are calling. Call and follow the voice prompts to receive faxed instructions on how to use the system and your index of fax-back subjects.

In USA 1-800-521-2846

In Canada 1-800-685-5381  
1-514-685-5381 (within Montreal)

#### DEALERS/SERVICE CENTERS (USA only)

For the name of a Brother authorized dealer or service center, call 1-800-284-4357.

#### SERVICE CENTERS (Canada only)

For service center addresses in Canada, call 1-800-853-6660.

#### INTERNET ADDRESS

For technical questions and downloading drivers: <http://www.brother.com>

# ***Definitions of Warnings, Cautions, and Notes***

The following conventions are used in this User's Guide:



## ***Warning***

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Indicates warnings that must be observed to prevent possible personal injury.

---



## ***Caution***

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Indicates cautions that must be observed to use the printer properly or prevent damage to the printer.

---

## ***Note***

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Indicates notes and useful tips to remember when using the printer.

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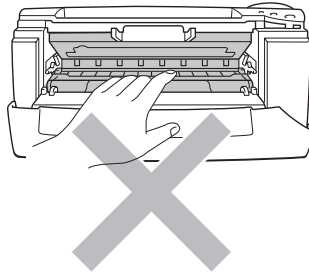
## To Use the Printer Safely



### **Warning**

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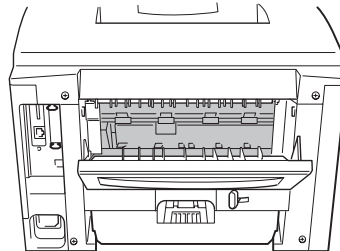
After you have just used the printer, some internal parts of the printer are extremely **HOT!** When you open the covers of the printer, never touch the shaded parts shown in the following illustrations.



### **Caution**

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After you have just used the printer, some internal parts of the printer are extremely **HOT!** Wait for the printer to cool down before you touch the internal parts of the printer.



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# ***CHAPTER 1***

## ***ABOUT THIS PRINTER***

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# ***What is included in the carton***

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## ***Components***

When you unpack the printer, check to see that you have all of the following parts.

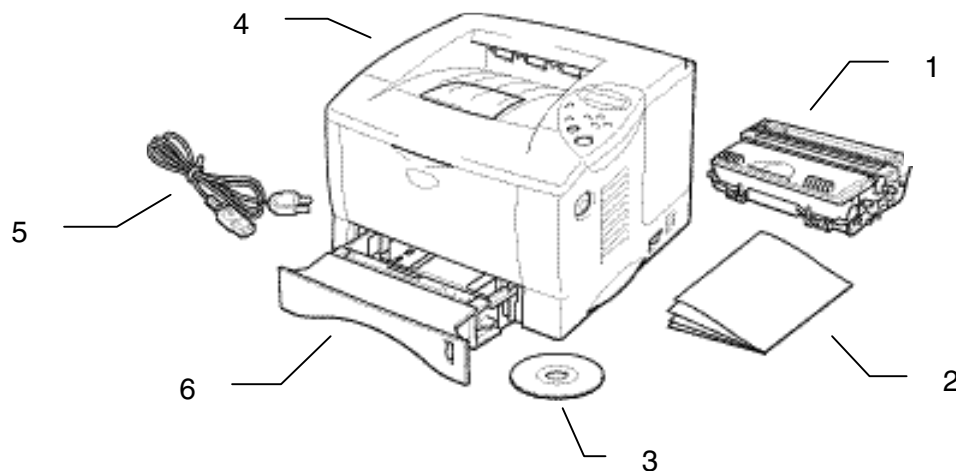


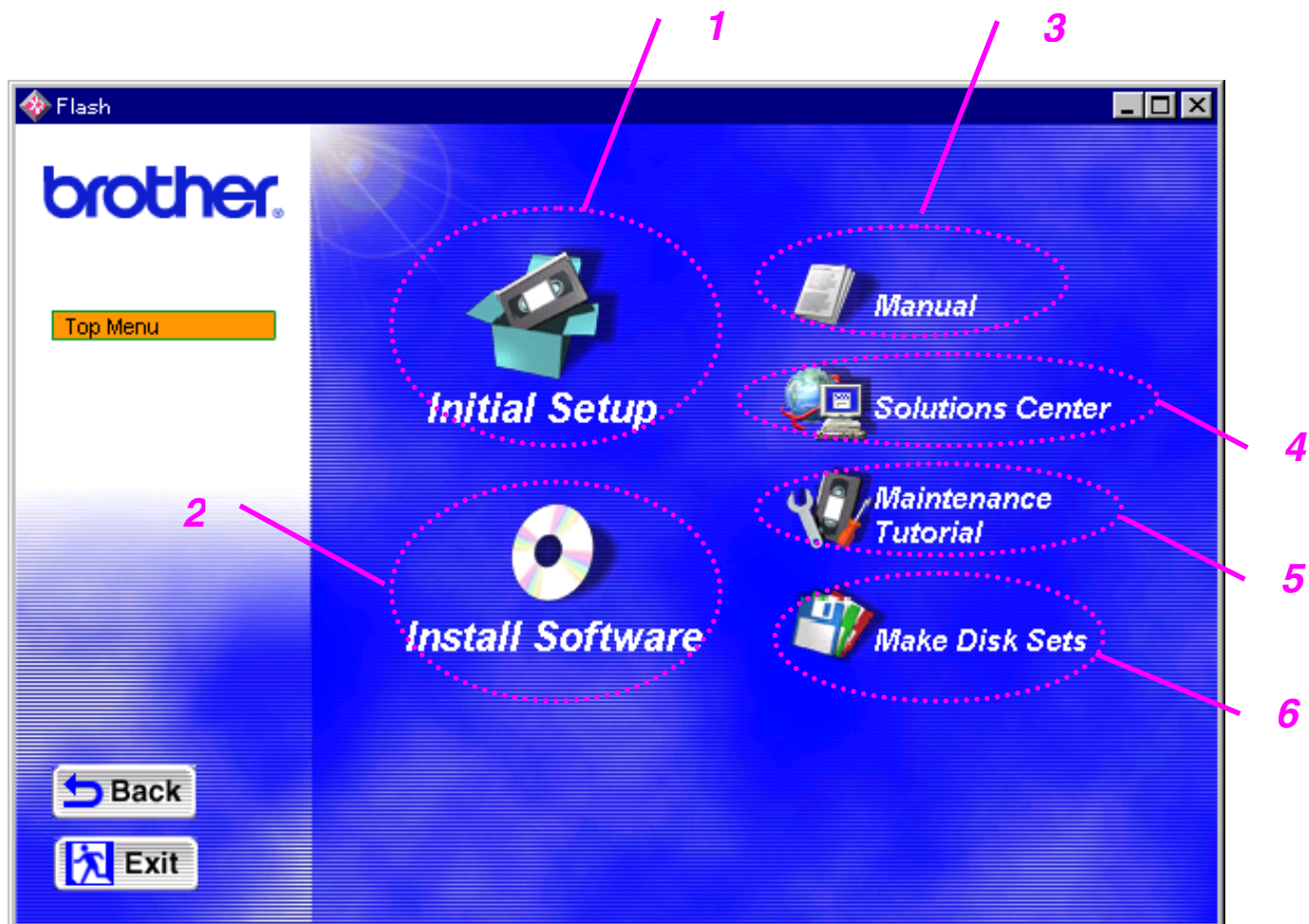
Fig. 1-1

1. Drum unit assembly (with Toner cartridge)
2. Documentation
3. CD-ROM
4. Printer
5. AC power cord
6. Paper cassette

❖ **Note**

- 
- An interface cable is not a standard accessory. Some computers have both a USB and a parallel port. Please purchase the appropriate cable for the interface you intend to use. Most existing parallel cables support bi-directional communication, but some might have an incompatible pin assignment or may not be IEEE 1284-compliant.
  - Do not use a parallel cable that is longer than 3 metres (10 feet).
  - The power cord may differ slightly from this figure depending on the country where you purchased the printer.
  - When you use a USB cable, make sure to use a high speed twisted cable (12Mbps), and connect it to the USB connector of your PC. Do not use the USB connector on the front of your PC or on the iMac's keyboard)
-

## ❖ What is included on the CD-ROM (For Windows user)



## **1 Initial setup**

*See the setup process from hardware setup to driver installation on a video.*

## **2 Install software**

### **For general users**

Printer driver (For more information, see Chapter 2)  
Automatic E-mail Printing

### **For administrators**

#### ***Network utility (For Administrator)***

- BRAdmin Professional
- Network Printer Driver Wizard
- Network Print Software
- Storage Manager

## **3 Manual**

User's Guide  
Network guide  
Technical Reviewer's Guide

## **4 Brother Solutions Center**

Introduction to our user support web page. You can easily access it and receive the latest drivers and information for this printer.

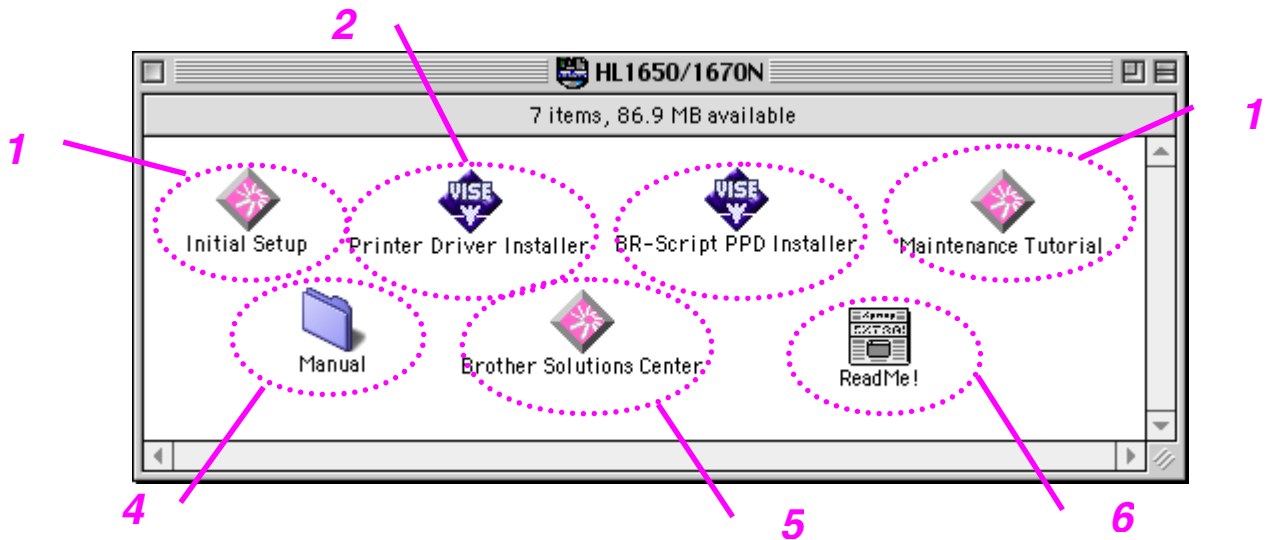
## **5 Maintenance Tutorial**

See the maintenance videos for this printer. We recommend that you view the videos before getting started.

## **6 Make Disk sets**

If you do not have a CD-ROM drive, copy the contents of the CD-ROM to floppy disks.

❖ **What is included on the CD-ROM  
(For Macintosh users)**



**1 Initial setup & Maintenance Tutorial**

See the maintenance operations required for this printer in the video movie. We recommend that you look at the video first before getting started.

**2 Printer Driver Installer**

For more information, [See Chapter 2.](#)

**3 BR-Script PPD Installer**

**Printer driver** ([For more information, see Chapter 2](#))

This printer has support for Mac OS 8.51, 8.6, 9.0 and 9.04.



## **4 Manual**

User's Guide

Network guide

Technical Reviewer's Guide

## **5 Brother Solutions Center**

## **6 Read me**

## General View

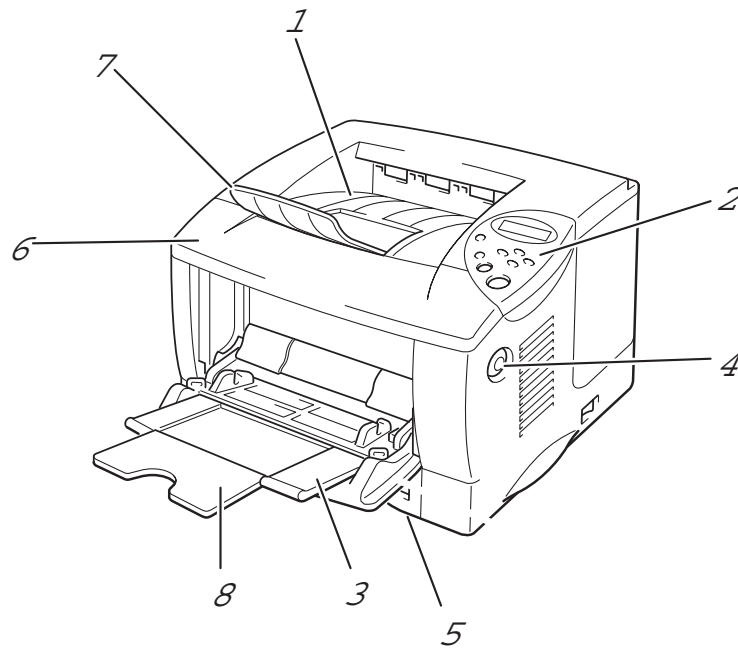


Fig. 1-2

- 1 Face down output tray
- 2 Control panel
- 3 Multi-purpose tray
- 4 Cover release button
- 5 Paper cassette
- 6 Front cover
- 7 Extension flap
- 8 Multi-purpose tray extension

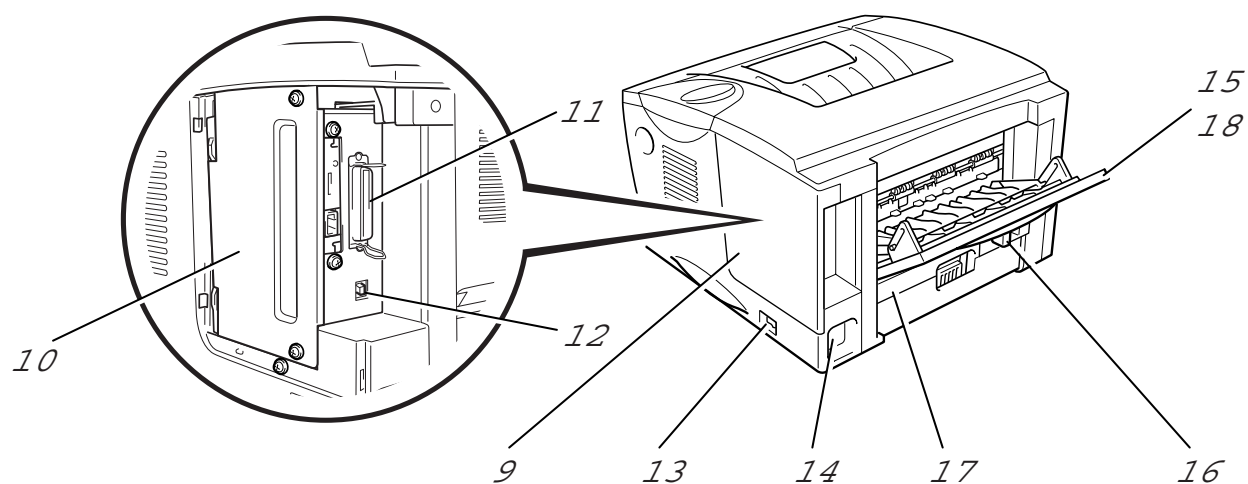


Fig. 1-3

- 9 Interface cover
- 10 PCB access plate
- 11 Parallel interface connector
- 12 USB connector
- 13 Power switch
- 14 AC power inlet
- 15 Face up output tray
- 16 Paper adjustment lever for duplex printing
- 17 Duplex tray
- 18 Face up tray extension

# ***Positioning the printer***

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Please take note of the following before using the printer.

## ***Power supply***

Use the printer within the specified power range.

AC power: AC 220-240 V or AC 100-120 V  
Frequency: 50/60 Hz

The power cord, including extensions, should not exceed 5 metres (16.5 feet).

Do not share the same power circuit with other high-power appliances, particularly an air conditioner, copier, shredder, etc. If it is unavoidable that you must use the printer with these appliances, we recommend that you use a voltage transformer or a high-frequency noise filter.

Use a voltage regulator if the power source is not stable.

## ***Environment***

Use the printer only within the following ranges of temperature and humidity.

Ambient temperature:	10°C to 32.5°C (50°F to 90.5°F)
Ambient humidity:	20% to 80% (without condensation)

Do not block the air exit on top of the printer. Do not place objects on top of the printer, especially on the air vent.

Ventilate the room in which you use the printer.

Do not place the printer where it is exposed to direct sunlight. Use a blind or a heavy curtain to protect the printer from direct sunlight if the printer is unavoidably set up near a window.

Do not install the printer near devices that contain magnets or generate magnetic fields.

Do not subject the printer to strong physical shocks or vibrations. Do not expose the printer to open flames or salty or corrosive gasses.

Place the printer on a flat, horizontal surface.

Keep the printer clean. Do not install the printer in a dusty place.  
Do not install the printer near an air conditioner.

Do not place the printer where the air vent of the printer can be obstructed. Keep a gap of approximately 100 mm (4 inches) between the air vent and the wall.

# ***What kind of paper can I use?***

---

## ***Print media and size***

The Paper trays and LCD panel descriptions in this manual are named as shown below.

Upper paper tray	Tray 1
Multi-purpose tray	MP tray
Optional Lower tray	Tray 2

The printer usually loads paper from the installed Multi-purpose tray, Upper paper tray or optional Lower paper tray.

Click the check mark in the following table to see the detailed information for each selection.

<b><i>Media type</i></b>	<b><i>Tray 1</i></b>	<b><i>MP tray</i></b>	<b><i>Tray 2</i></b>	<b><i>Duplex printing</i></b>	<b><i>Select the Media type from the printer driver</i></b>
<b><i>Plain paper</i></b>	✓	✓	✓	✓	Plain paper
<b><i>Recycled paper</i></b>	✓	✓	✓	✓	Plain paper
<b><i>Bond paper</i></b>		✓			Bond paper
<b><i>Thick paper</i></b>		✓			Thick paper or Thicker paper
<b><i>Transparencies</i></b>	✓ up to 10 sheets	✓ Only A4, Letter			Transparencies
<b><i>Label</i></b>		✓ Only A4, Letter			Plain paper
<b><i>Envelopes</i></b>		✓			Envelopes
<b><i>Card stock</i></b>		✓			Thick paper or Thicker paper

	<i>Upper paper tray (Tray 1)</i>	<i>Multi-purpose tray (MP tray)</i>	<i>Optional Lower tray unit (Tray 2)</i>	<i>Duplex printing</i>
<b><i>Paper size</i></b>	A4, Letter, Legal, 8.5 x 13 in., B5 (JIS), B5 (ISO), Executive, A5, A6, B6	Width: 70 to 216 mm (215 to 8.5 in.) Length: 116 to 356 mm (4.57 to 14.0 in.)	A4, Letter, Legal, B5 (JIS), B5 (ISO), Executive, A5	A4, Letter, Legal
<b><i>Capacity</i></b>	250 sheets (80 g/m <sup>2</sup> or 21 lbs.)	100 sheets (80 g/m <sup>2</sup> or 21 lbs.)  Legal : 30 8.5 x 13 in. : 30 labels : 10	250 sheets (80 g/m <sup>2</sup> or 21 lbs.)	

We recommend the following print methods (output tray) for each paper media type:

<b>Media type</b>	<b>Paper output</b>		<b>Notes</b>
	<b>Face down</b>	<b>Face up</b>	
<b>Plain paper</b>	✓	✓	60 g/m <sup>2</sup> to 105 g/m <sup>2</sup> (16 to 28 lbs.)
<b>Thick paper</b>		✓	105 g/m <sup>2</sup> to 161 g/m <sup>2</sup> (28 to 43 lbs.)
<b>Recycled paper</b>	✓	✓	
<b>Transparencies</b>	✓		OHP films
<b>Label</b>		✓	
<b>Envelopes</b>		✓	
<b>Card stock</b>		✓	

You can select the priority of the paper source in the Paper Menu on the Control Panel.

For more information about the paper settings, see Chapter 3.



**Recommended paper**

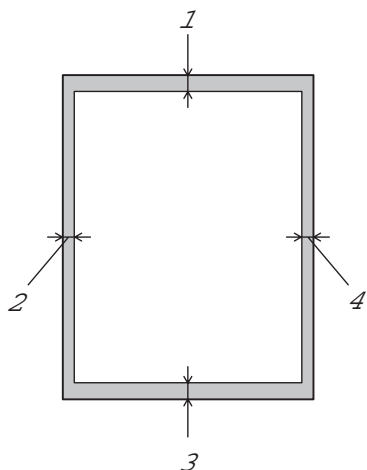
	<b>Europe</b>	<b>USA</b>
Plain paper	Xerox Premier 80 g/m <sup>2</sup> Xerox Business 80 g/m <sup>2</sup> Modo DATACOPY 80 g/m <sup>2</sup> IGEPA X-Press 80 g/m <sup>2</sup>	Xerox 4200DP 20 lb Champion Paper One 20 lb Hammermill Laser Paper 24 lb
Recycled paper	Steinbis Recycling Copy 80 g/m <sup>2</sup>	
Transparency	3M CG3300	3M CG 3300
Label	Avery laser label L7163	Avery laser label #5160

- ◆ *Before you purchase large quantities of paper, please test print a small quantity to ensure that the paper is suitable.*
- ◆ *Use paper designed for plain paper copying.*
- ◆ *Use paper that is 75 to 90 g/m<sup>2</sup>.*
- ◆ *Use neutral paper; avoid acidic or alkaline paper.*
- ◆ *Use Long grain paper.*
- ◆ *Use paper with a moisture content of approximately 5%.*

## ❖ *Printable area*

The figure below shows the printable area.

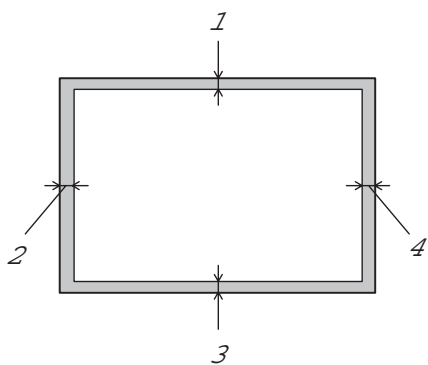
### ***Portrait***



**Fig. 1-4**

	<b><i>USA/Canada</i></b>	<b><i>Europe/other countries</i></b>
<b>1</b>	0.17 inch (4.2 mm)	4.2 mm
<b>2</b>	0.25 inch (6.35 mm)	6.01 mm
<b>3</b>	0.17 inch (4.2 mm)	4.2 mm
<b>4</b>	0.25 inch (6.35 mm)	6.01 mm

### ***Landscape***



**Fig. 1-5**

	<b><i>USA/Canada</i></b>	<b><i>Europe/other countries</i></b>
<b>1</b>	0.17 inch (4.2 mm)	4.2 mm
<b>2</b>	0.2 inch (5.08 mm)	5.0 mm
<b>3</b>	0.17 inch (4.2 mm)	4.2 mm
<b>4</b>	0.2 inch (5.08 mm)	5.0 mm

## ***Printing from the Paper cassette***

1. Pull the paper cassette out of the printer.

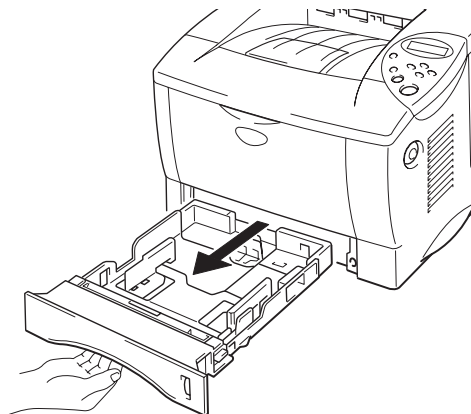


Fig. 1-6

2. While pressing the paper guide release lever, slide the adjusters to fit the paper size. Check that they fit correctly into the slots.

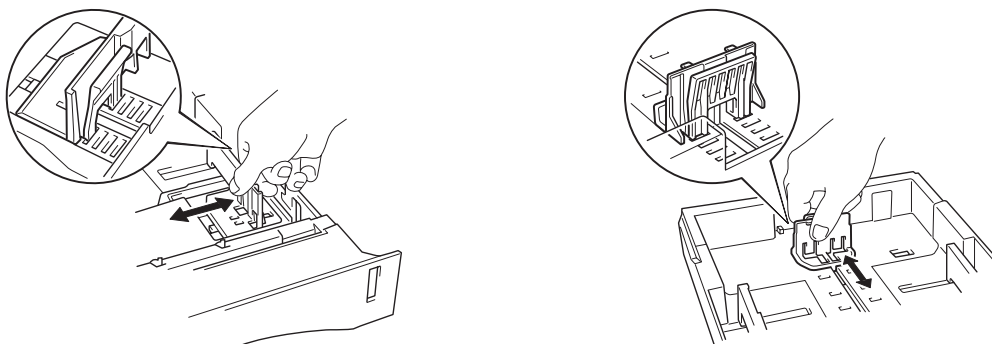
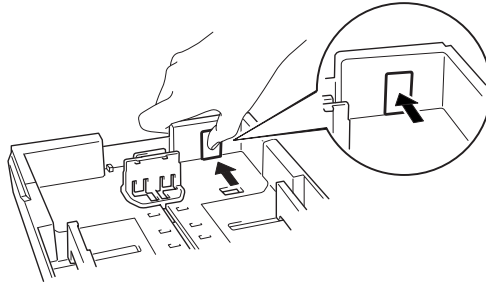


Fig. 1-7

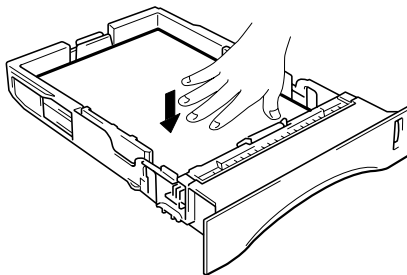
For Legal or 8.5 x 13 in. paper

While pressing the Universal guide release lever, extend the rear of the Paper cassette.



**Fig. 1-8**

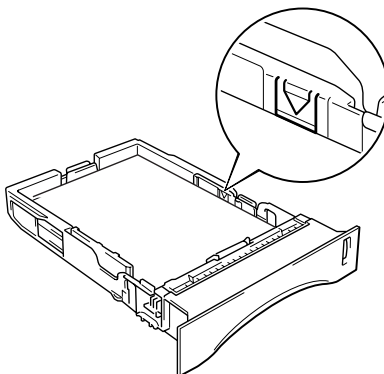
- 3.** Load paper in the paper cassette. Check that the paper is flat and below the limit mark.



**Fig. 1-9**

**Note**

Do not load more than 250 sheets of paper (80 g/m<sup>2</sup> or 21 lb.) in the cassette or paper jams may occur. Paper can be loaded up to the lines on the sliding guide.



4. Install the paper cassette into the printer.

**Note**

- Extend the Extension flap to prevent the paper from sliding off the face down output tray.
- If you choose not to extend the Extension flap, we recommend that you remove printed pages immediately after they exit the printer.

When you print on transparencies, use the Face down output tray.

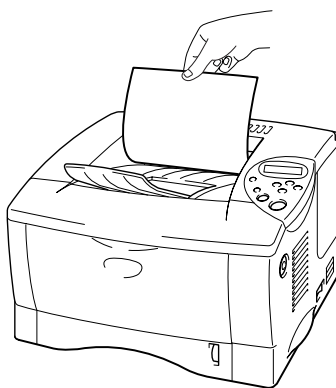
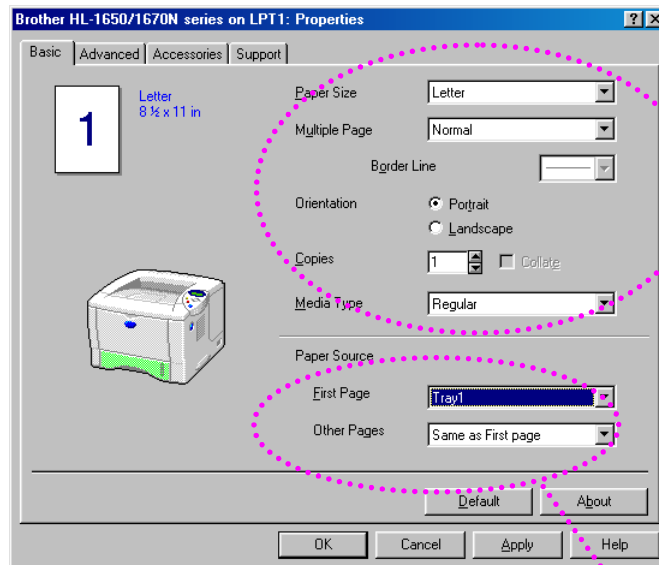


Fig. 1-10

5. Change the following settings in the printer driver Properties tab.

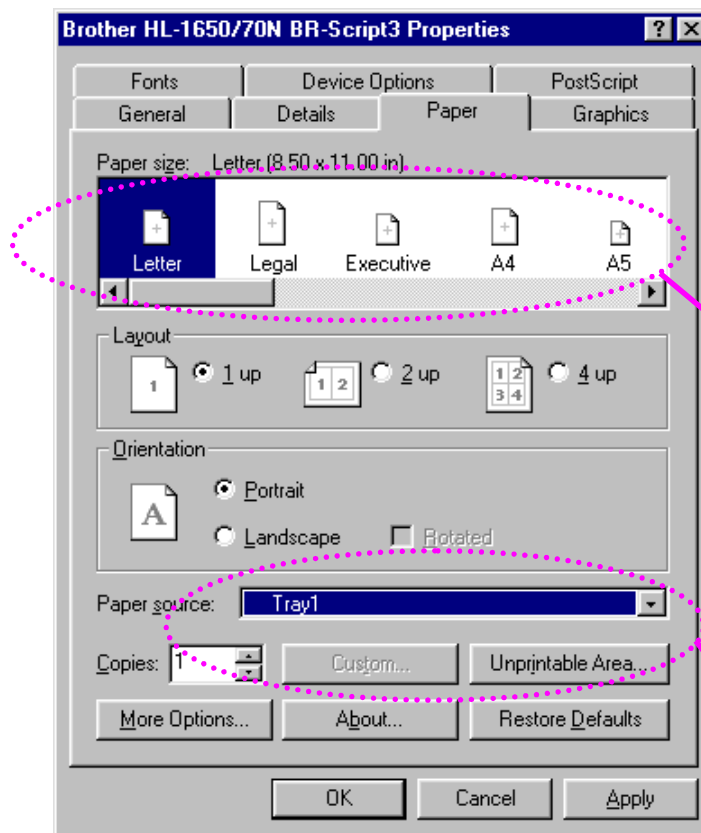
**<PCL driver>**



Select the paper size, media type etc.

Select the Paper source.

**<PS driver>**



Select the Paper size.

Select the Paper source etc.

## Printing from the Multi-purpose tray

### ❖ Note

- For correct printing, you must select the *same* paper size from within your software application as the paper in the tray.
- If your application software does not support paper size selection in its print menu, you can change the paper size on the printer's control panel under the PAPER menu. [For more information, see Chapter 3.](#)

- ➡ 1. Open the Multi-purpose tray.

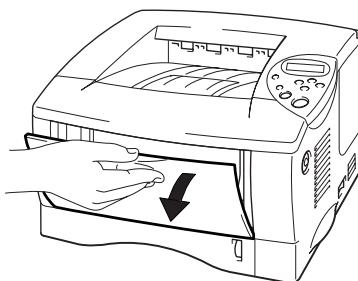


Fig. 1-11

- ➡ 2. Unfold the Multi-purpose tray extension.



Fig. 1-12

3.

Place paper in the Multi-purpose tray so it touches the back of the tray and remains below the limit mark.

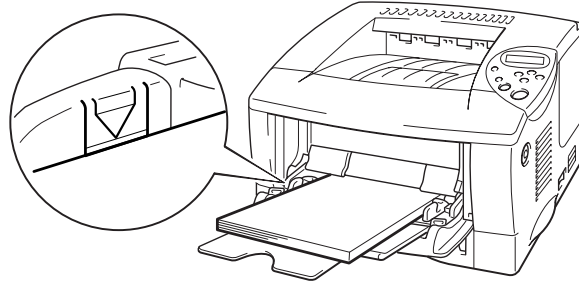


Fig. 1-13

❖ **Note**

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When you place paper on the Multi-purpose tray, note the following:

- If you will be printing on paper that weighs more than  $135 \text{ g/m}^2$  (36 lbs), use the face up output tray.
  - Insert the leading edge of the paper first and push it gently into the tray.
  - If you use pre-printed paper in the Multi-purpose tray, the paper should be inserted top edge first with the printed side face up.
-



- ➡ 4. Press and slide the paper width adjuster to fit the paper.

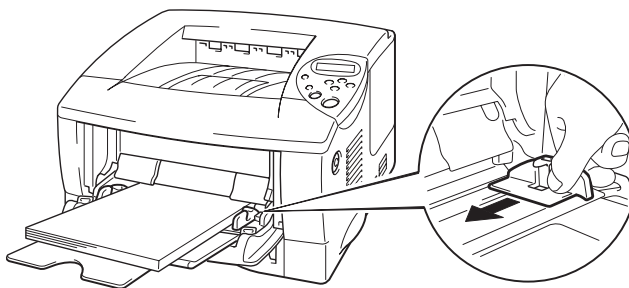


Fig. 1-14

❖ **Note**

- 
- Make sure neatly stacked paper is correctly seated in the Multi-purpose tray; otherwise paper may not be fed correctly, resulting in skewed printouts or paper jams.
  - During printing, the inside tray automatically rises to feed paper into the printer.
- 

- ➡ 5. When you print on transparencies, use the Face down output tray.

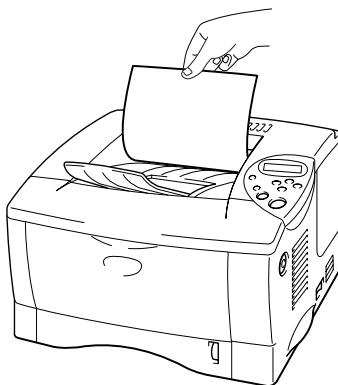
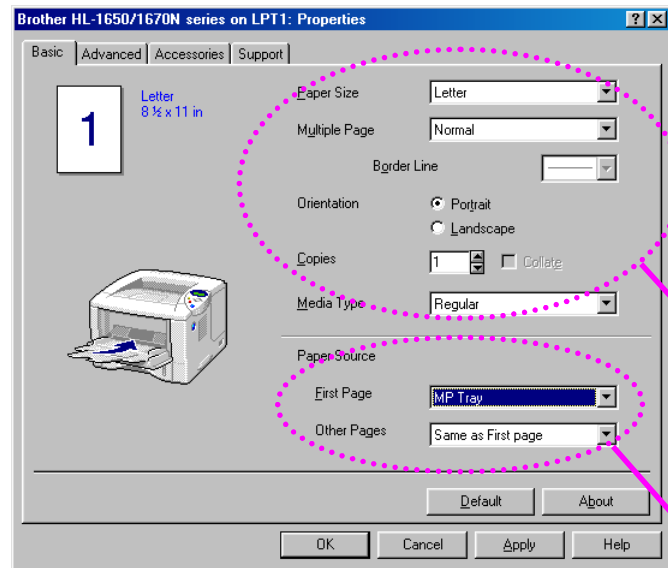


Fig. 1-15

6. Change the following settings in the printer driver properties tab.

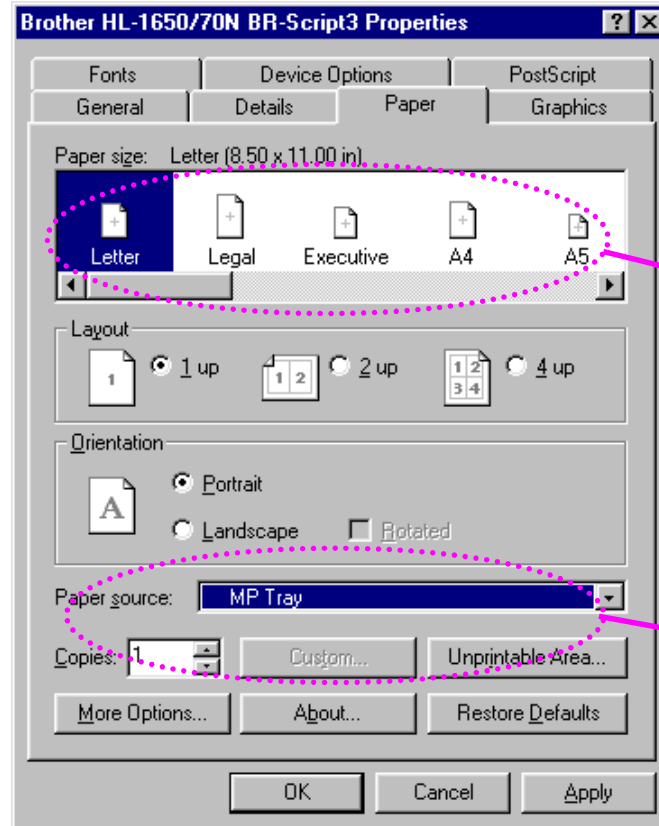
**<PCL driver>**



Select the paper size, media type etc.

Select the Paper source.

**<PS driver>**



Select the Paper size.

Select the Paper source etc.

# ***Printing envelopes***

## ***Envelope types to avoid***

- Envelopes that are damaged, curled, wrinkled, or irregularly shaped
- Envelopes that are extremely shiny or highly textured
- Envelopes with clasps, snaps or tie strings.
- Envelopes with self-adhesive closures
- Envelopes of baggy construction
- Envelopes that are not sharply creased
- Embossed envelopes
- Envelopes that were previously printed by a laser printer
- Envelopes that are pre-printed on the inside
- Envelopes that cannot be arranged uniformly when placed in a pile
- Envelopes constructed with paper that exceeds the paper weight specifications for the printer.
- Poorly manufactured envelopes with edges that are not straight or consistently square.
- Envelopes with transparent windows, holes, cutouts or perforations.



Fig. 1-16

**USE OF THE ENVELOPE TYPES LISTED ABOVE MAY CAUSE DAMAGE TO YOUR PRINTER. SUCH DAMAGE IS NOT COVERED UNDER ANY WARRANTY OR SERVICE AGREEMENT.**

❖ **Note**

- Before printing envelopes, you must fan the stack of envelopes well to avoid paper jams and misfeeds.



- Do not load different types of paper at the same time in the paper cassette because paper jams and misfeeds may occur.
- Do not print envelopes using Duplex printing.
- For correct printing, you must select the *same* paper size from within your software application as the paper in the tray.
- If your application software does not support paper size selection in its print menu, you can change the paper size on the printer's control panel under the PAPER menu. [For more information, see Chapter 3.](#)

1. Open the Multi-purpose tray.

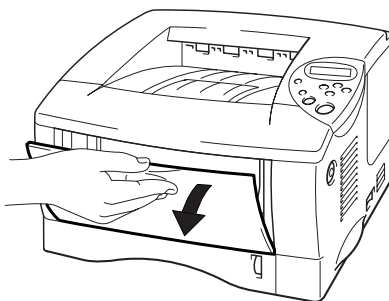


Fig. 1-17

2. Unfold the Multi-purpose tray extension.

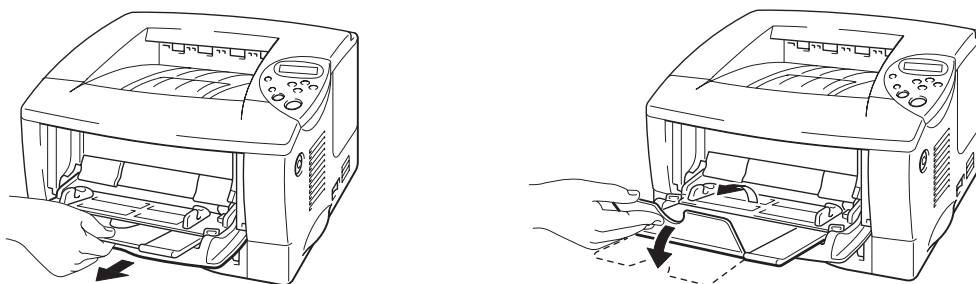


Fig. 1-18

- ➡ **3.** Open the Face up output tray.

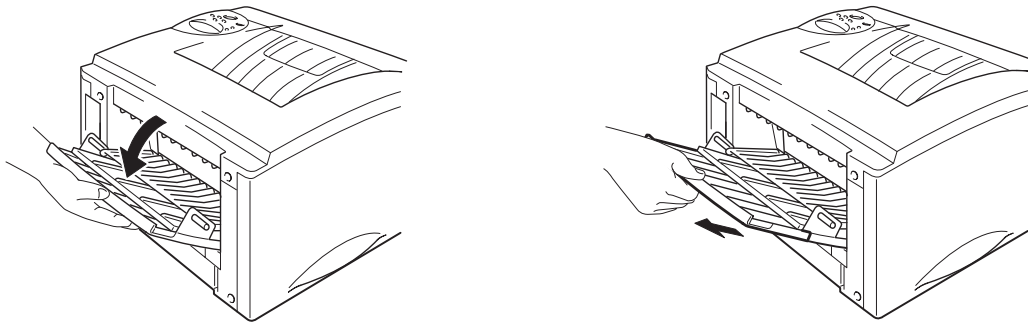


Fig. 1-19

- ➡ **4.** Place envelopes in the Multi-purpose tray so they touch the back of the tray and remain below the limit mark.

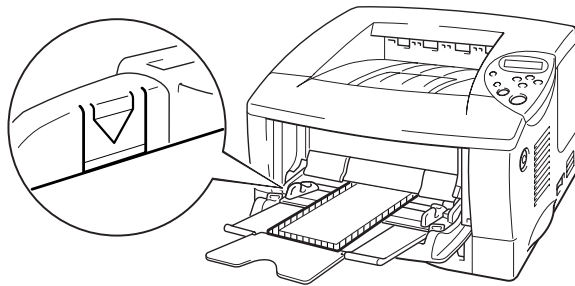


Fig. 1-20

❖ **Note**

---

When you place paper in the Multi-purpose tray, note the following:

- If you will be printing on paper that weighs more than 135 g/m<sup>2</sup> (36 lbs), use the face up output tray.
  - Insert the leading edge of the paper first and push it gently into the tray.
  - The top of the paper stack must be under the guides that are on both sides of the tray. The maximum thickness is 11 mm (or 0.43 inch).
  - The printed side must be face up.
-

5. Press and slide the paper width adjuster to fit the envelope size.

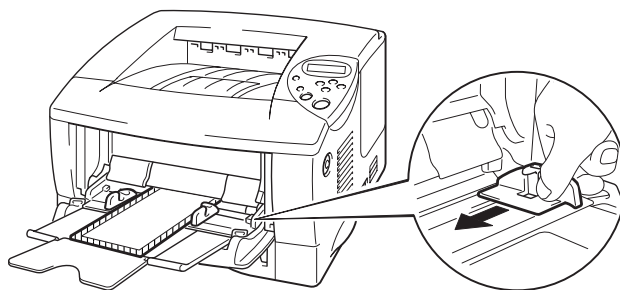


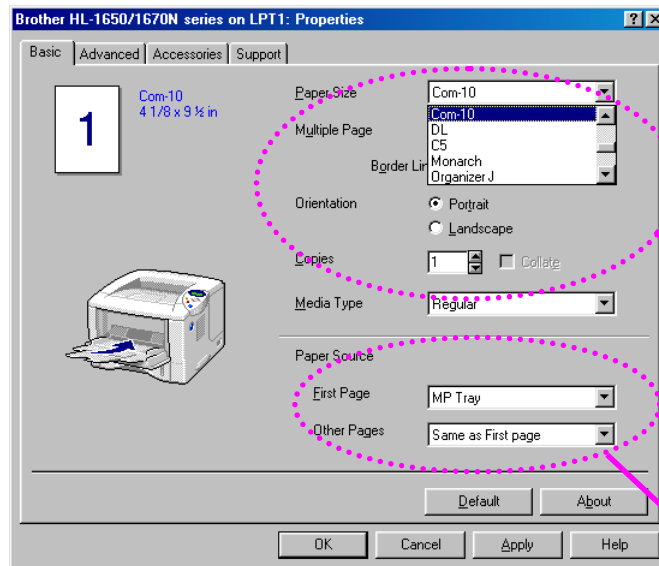
Fig. 1-21

◆ **Note**

- 
- Make sure that neatly stacked envelopes are correctly seated in the Multi-purpose tray otherwise envelopes may not be fed correctly, resulting in skewed printouts or paper jams.
  - When printing, the inside tray automatically rises to feed envelopes into the printer.
-

6. Change the following settings in the printer driver properties tab.

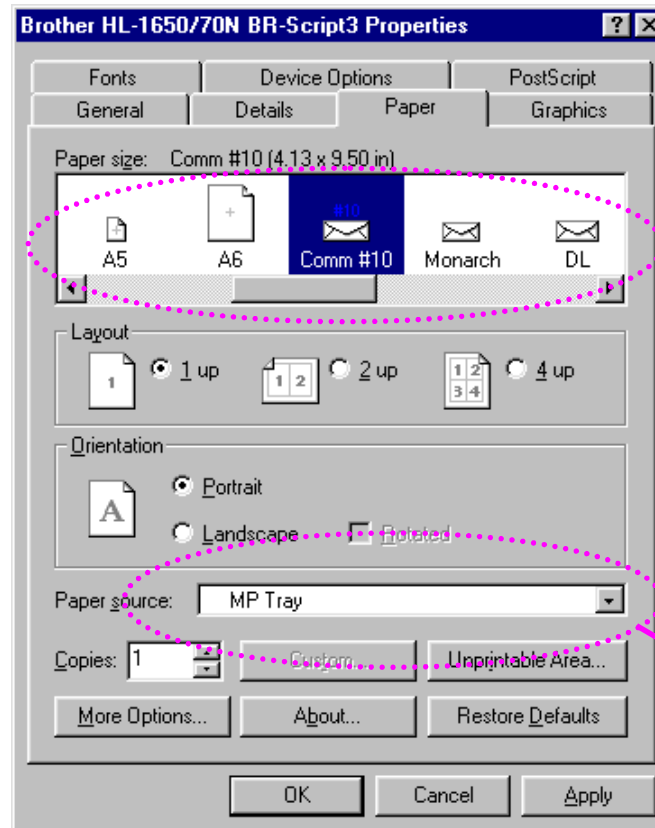
**<PCL driver>**



Select the envelope size, media type etc.

Select the Multi-purpose tray.

**<PS driver>**



Select the envelope size.

Select the Multi-purpose tray.



## ***Printing on Labels, Transparencies etc.***

### ***Special paper types to avoid***

- Damaged, curled, wrinkled, or irregularly shaped paper

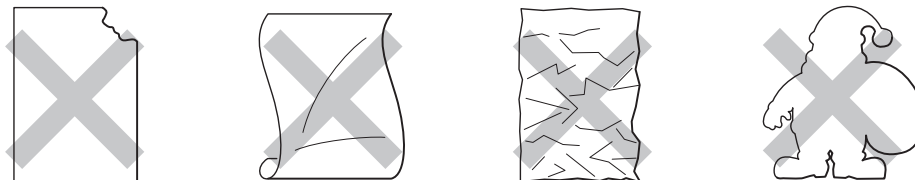
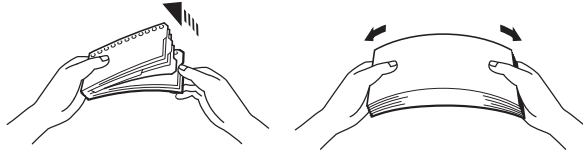


Fig. 1-22

◆ **Note**

- Before using paper with holes, such as organizer sheets, you must fan the stack of paper well to avoid paper jams and misfeeds.



- Do not use paper with perforations at the edge.
- Do not place the punched holes of organizer sheets near the actuator (paper sensor).
- Do not use organizer sheets that are stuck together. The glue on them might cause damage to the printer.
- Do not load different types of paper at the same time in the paper cassette because it may cause paper jams or misfeeds.
- For correct printing, you must select the same paper size from within your software application as the paper in the tray.
- If your application software does not support paper size selection in its Print menu, you can change the paper size on the printer's control panel under the PAPER menu. [For more information, see Chapter 3.](#)



**Warning**

Do not touch transparencies that have just been printed because they are very **hot!**

1. Open the Multi-purpose tray.

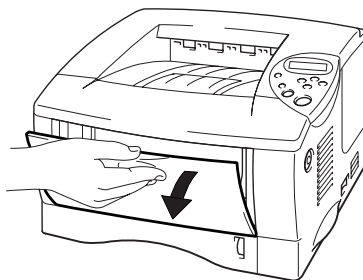


Fig. 1-23

2. Unfold the Multi-purpose tray extension.

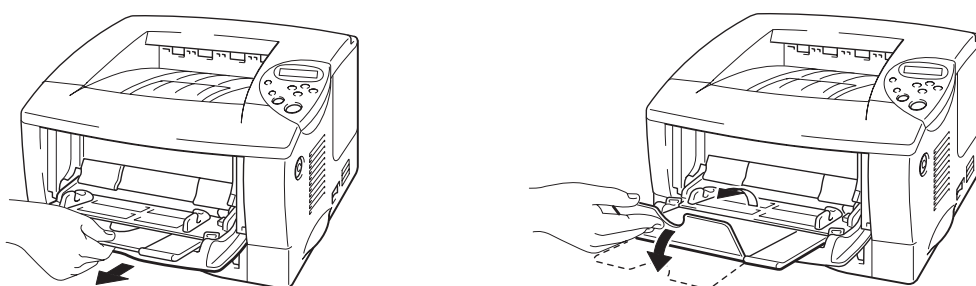


Fig. 1-24

When you use labels, open the Face up output tray.  
When you use transparencies, print to the Face down output tray.

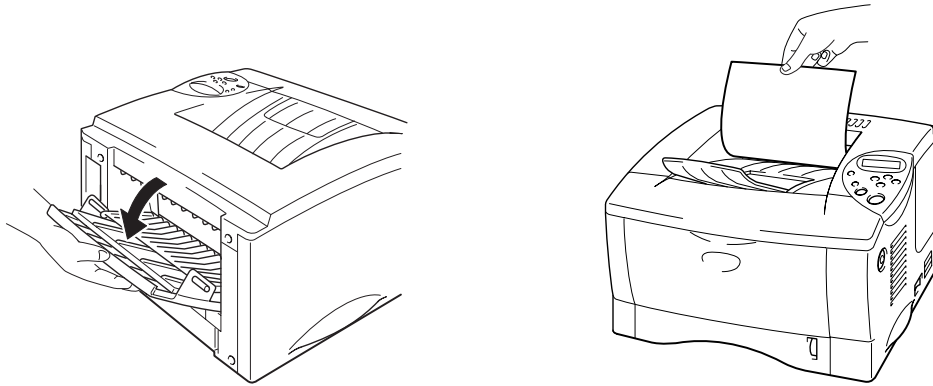


Fig. 1-25

3. Place paper in the Multi-purpose tray so it touches the back of the tray and remains below the limit mark.

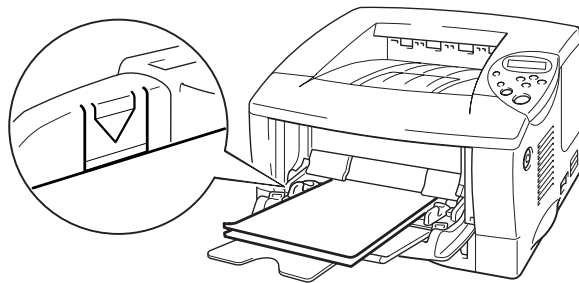


Fig. 1-26

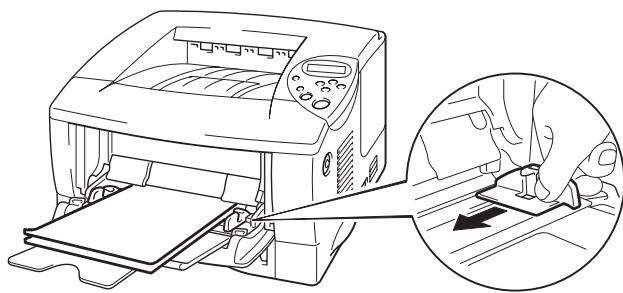
◆ **Note**

---

When you place paper in the Multi-purpose tray, note the following:

- If you will be printing on paper that weighs more than 135 g/m<sup>2</sup> (36 lbs), use the face up output tray.
  - Insert the leading edge of the paper first and push it gently into the tray.
  - The printed side must be face up.
-

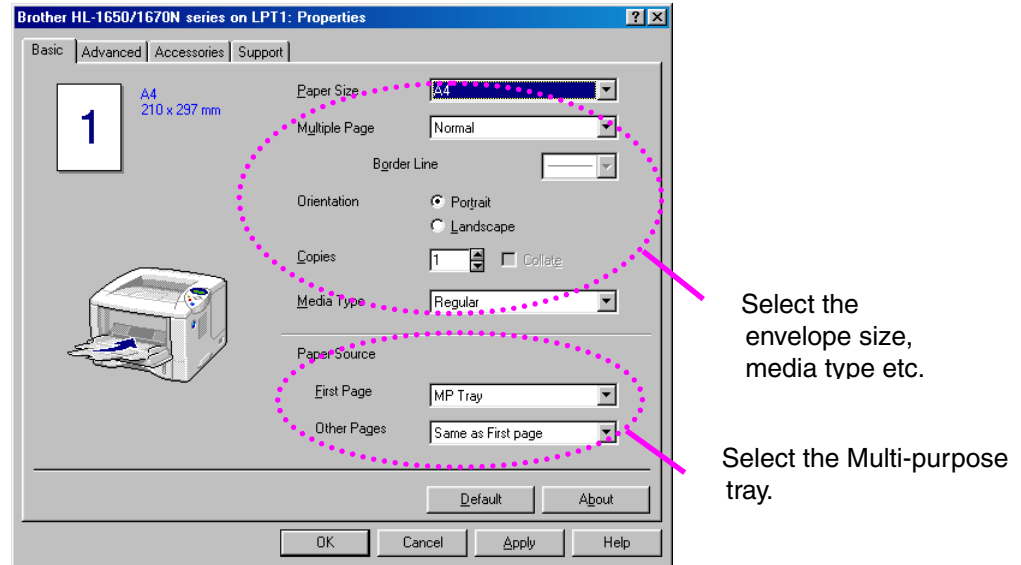
- 4.** Press and slide the paper width adjuster to fit the paper.



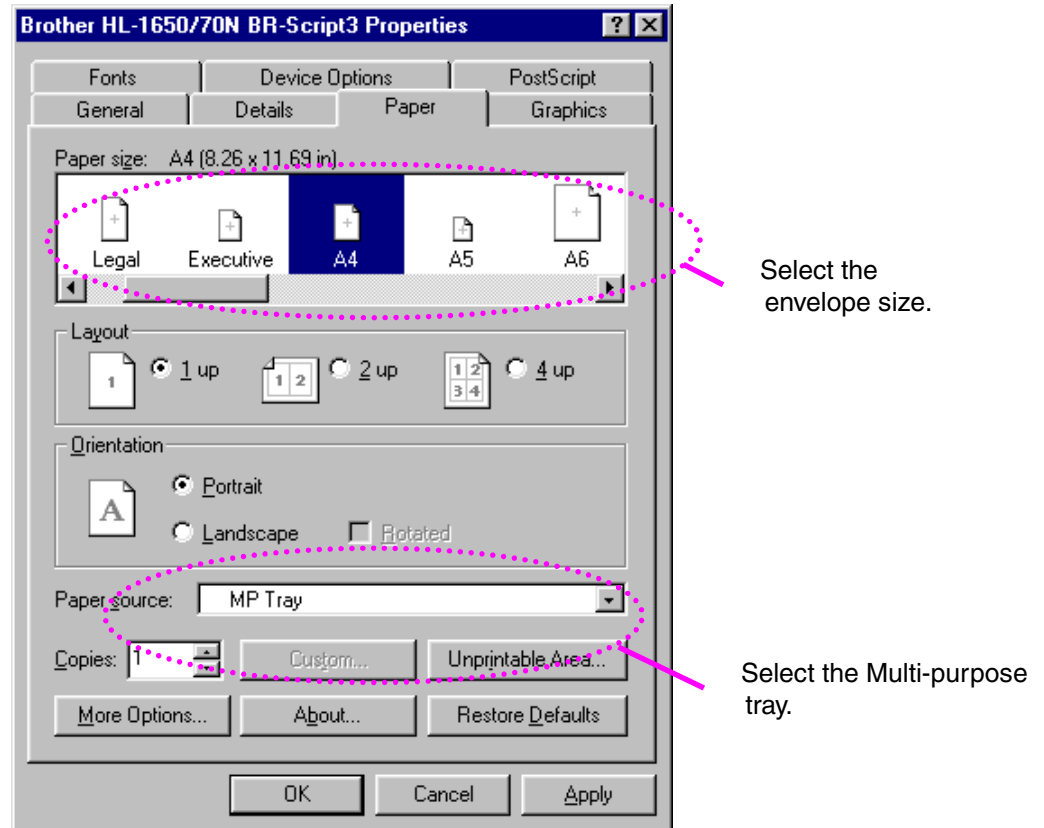
**Fig. 1-27**

5. Change the following settings in the printer driver Properties tab.

**<PCL driver>**



**<PS driver>**



## ***Printing to the Face up output tray (Face up printing)***

When the Face up output tray is open, the printer has a straight paper path from the Paper cassette or Multi-purpose tray to the rear of the printer. Use this output method when you want to print on special media that is thick or should not be bent, such as heavy paper, labels, transparencies, card stock or envelopes.

1. Open the Face up output tray.

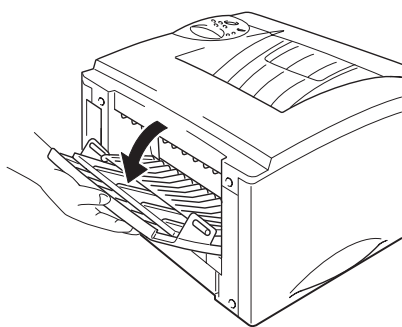


Fig. 1-28

2. Unfold the Face up output tray extension.

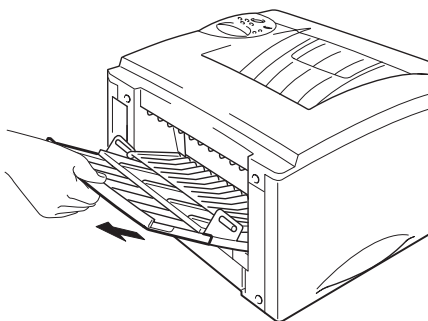


Fig. 1-29

- 3.** Place the paper into the Paper cassette or Multi-purpose tray.

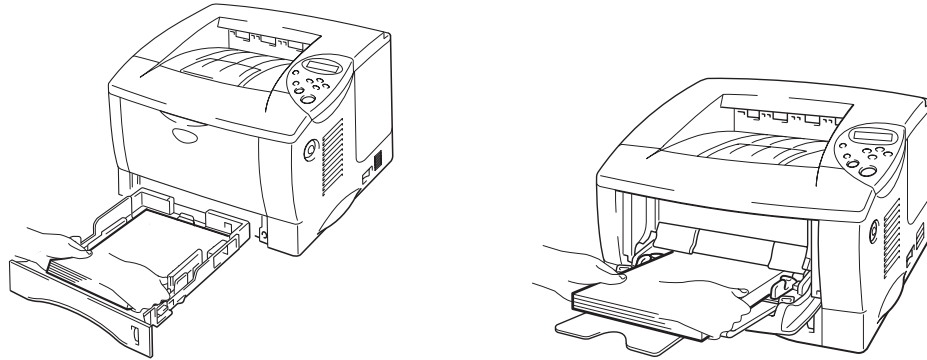


Fig. 1-30

- 4.** After the printer ejects all the printed pages, remove them and close the Face up output tray.



## ***Printing on both sides of the paper (Duplex printing)***

The supplied printer drivers for *Windows® 95 / 98 / Me*, *Windows NT® 4.0*, *Windows® 2000* supports automatic duplex printing.

### **Guidelines for printing on both sides of the paper**

- 1 If the paper is thin, it may wrinkle.
- 2 If paper is curled, straighten it, and then place it in the paper cassette.
- 3 Use A4, Letter or Legal size plain paper (60 to 105 g/m<sup>2</sup> or 16 to 28 lb.). Do not use bond paper.
- 4 If the paper is not feeding correctly, it may be curled. Remove the paper and straighten it.

1. Load paper into the Paper cassette or Multi-purpose tray.

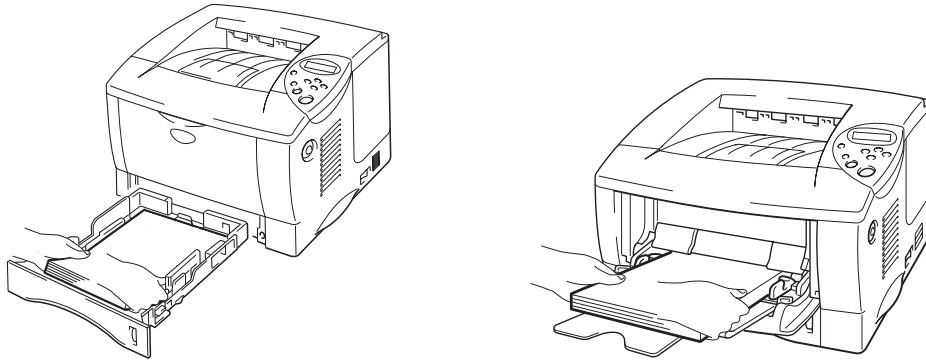


Fig. 1-31

2. When you use A4 or Letter size paper, set the Paper adjustment lever for duplex printing to match your paper size.

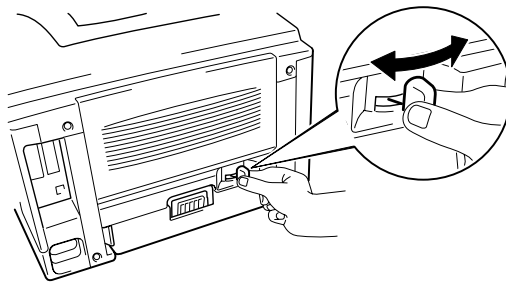



Fig. 1-32

◆ **Note**

---

If the Paper adjustment lever for duplex printing is not correctly set for the paper size, paper jams may occur and the printing will be out of position on the paper.

---

-  **3.** Open the Properties tab in the printer driver. Select the duplex printing mode in the Paper tab, and then click the OK button. The printer will print on both sides of the paper automatically.

# Manual Feed

If you place paper in the Multi-purpose tray when the setting MANUAL FEED = ON has been set in PAPER mode using the control panel, the printer will load paper only from the Multi-purpose tray.

## ❖ Note

---

When you feed paper manually, note the following:

- If your application software supports a manual feed selection in the Print menu, you can select it in that software. The software command setting overrides the Control panel's setting. You will not have to set MANUAL FEED and MP SIZE in PAPER mode.
  - If you use pre-printed paper in the Multi-purpose tray, the paper should be inserted top edge first with the pre-printed side face up.
-

# ***CHAPTER 2***

# ***DRIVER AND SOFTWARE***

---

# Printer Driver

---

A Printer Driver is software that translates data from the format used by a computer into the format required by a particular printer, which is typically done using a printer command language or page description language.

The printer drivers for the following operating systems are on the supplied CD-ROM. The latest printer driver can also be downloaded from the Brother Solutions Center at <http://solutions.brother.com>.

For Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000.

- PCL (Hewlett-Packard Laserjet laser printer) driver
- BR-Script (PostScript Level3 language emulation) driver

For Macintosh

- BR-Script (PostScript Level3 language emulation) driver (**For more information, see the Network User's Guide on the CD-ROM.**)
- USB printer driver for Macintosh

	PCL driver	PS driver
Windows 95/98/Me	✓	✓
Windows 2000	✓	✓
Windows NT4.0	✓	✓
Macintosh (via Network)		✓
Macintosh (via USB)	✓	

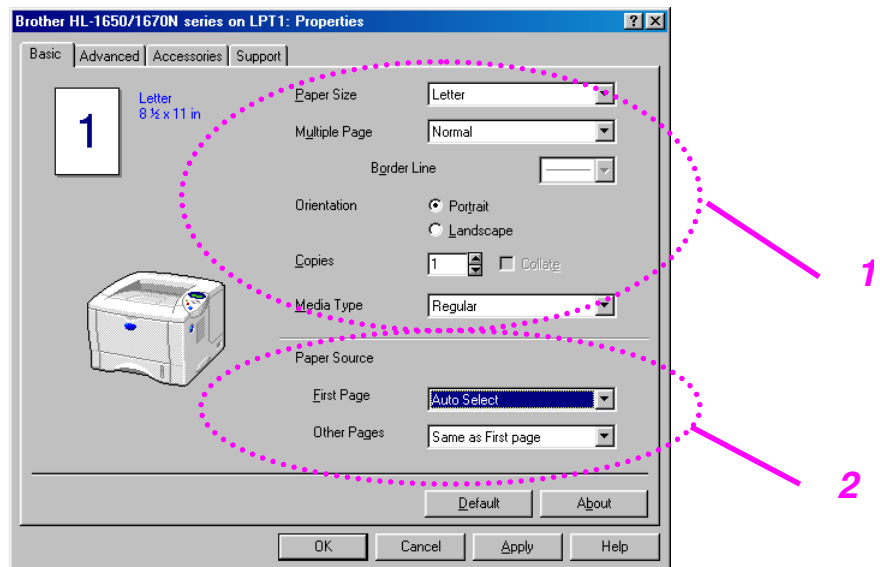
If you want to print from a DOS application, [please see Chapter 6 of this manual](#).

## Features in the PCL printer driver (Windows users only)

For more detailed information, please see the on-line Help in the printer driver.

You can also change settings by clicking the illustration on the left side of the tab screen.

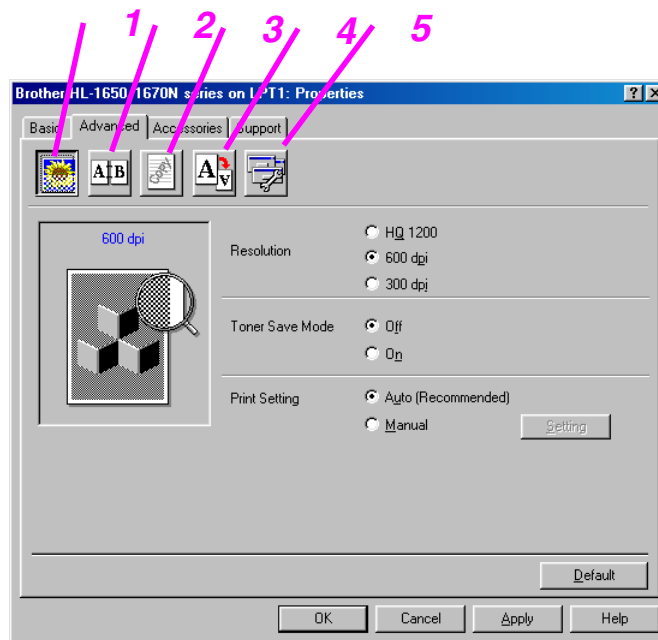
### ❖ Basic tab



- 1 Select the Paper size, Multi-page, Orientation etc..
- 2 Select the Paper source etc..



## ❖ *Advanced tab*



Change the tab settings by pressing these icons as follows:

1. Print Quality
2. Duplex
3. Watermark
4. Page Setting
5. Device Options

## ◆ **Print Quality**

Select the Resolution, Toner save and Print settings.

- You can change the resolution as follows:  
300 dpi  
600 dpi  
HQ1200: Brother HQ1200 technology provides the best print quality while printing at full engine speed.
- Toner Save  
You can save running costs by turning on the Toner Save mode, which reduces the printer density.
- With the Print setting set to MANUAL, you can change the Brightness, Contrast, Graphics mode settings and TrueType mode options manually.

## ◆ **Duplex**

This printer has a Duplex printing function as standard. If you select the duplex button, the dialogue box for making duplex settings appears. Six types of duplex binding directions are available for each orientation.

## ◆ ***Watermark***

You can place a watermarked logo or text into your documents.

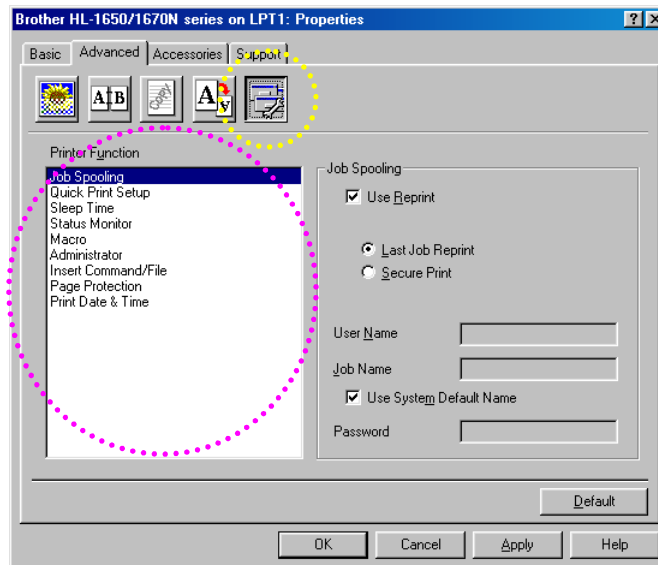
When you use a bitmap file as a watermark, you can change the size of the watermark and place it anywhere you like on the page.

When you use text as a watermark, you can change the font, darkness and angle settings.

## ◆ ***Page Setting***

Change the print image scaling and select Mirror / Reverse print options.

## ◆ Device Options



Set the following print function modes in this tab.

Job Spooling  
 Quick Print Setup  
 Sleep Time  
 Status Monitor  
 Macro  
 Administrator  
 Insert Command File  
 Page Protection  
 Print Date & Time

## ***Job Spooling***

You can reprint a document without sending the data again ( you will need to send the password again if one is set) from your PC because the printer will save data that you specify for reprinting.

- Last job reprint :      Reprint the last job
- Secure Print :        Print the data with a password

For more information about the reprint function, see “REPRINT switch” in Chapter 3.

### ***Note***

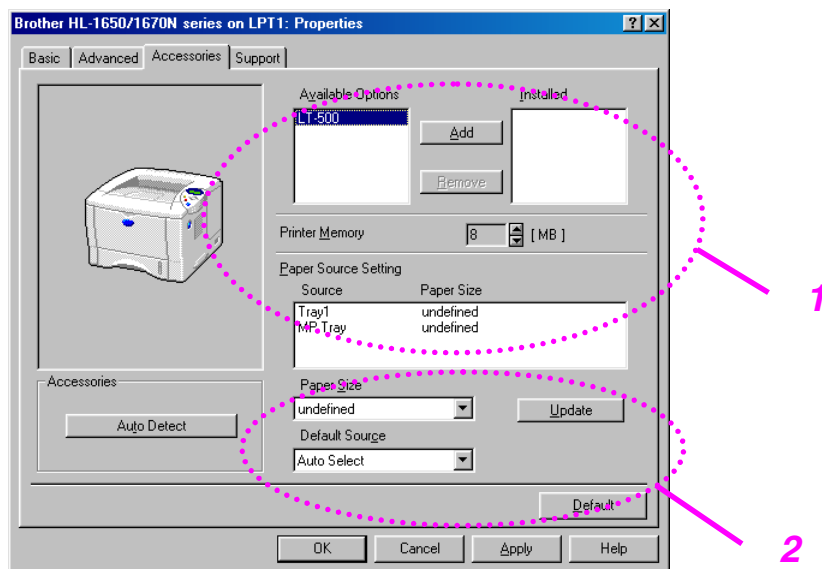
---

If you want to prevent other people from printing your own data using the reprint function, remove the Use Reprint check mark in Job Spooling settings.

---

## ❖ Accessories

When you install options, add those options and make settings for them in the Accessories tab as follows.



- 1 You can add and remove the options manually or automatically.

### Automatic Printer Options Detection

This function detects the current optional unit devices automatically and the available functions are reflected in the printer driver.

When you press “Auto Detect”, options that are installed on the printer will be listed. You can manually add or delete options. Tray and other settings will match the installed options.

- 2 Paper Source Setting

This feature recognizes the paper size in each paper tray automatically.

## ❖ *Support tab*

- You can download the latest driver by accessing the Brother Solutions Center at <http://solutions.brother.com>.
- You can see the printer driver version.
- You can check the current driver settings.
- You can print the Configuration page, Test page, etc..

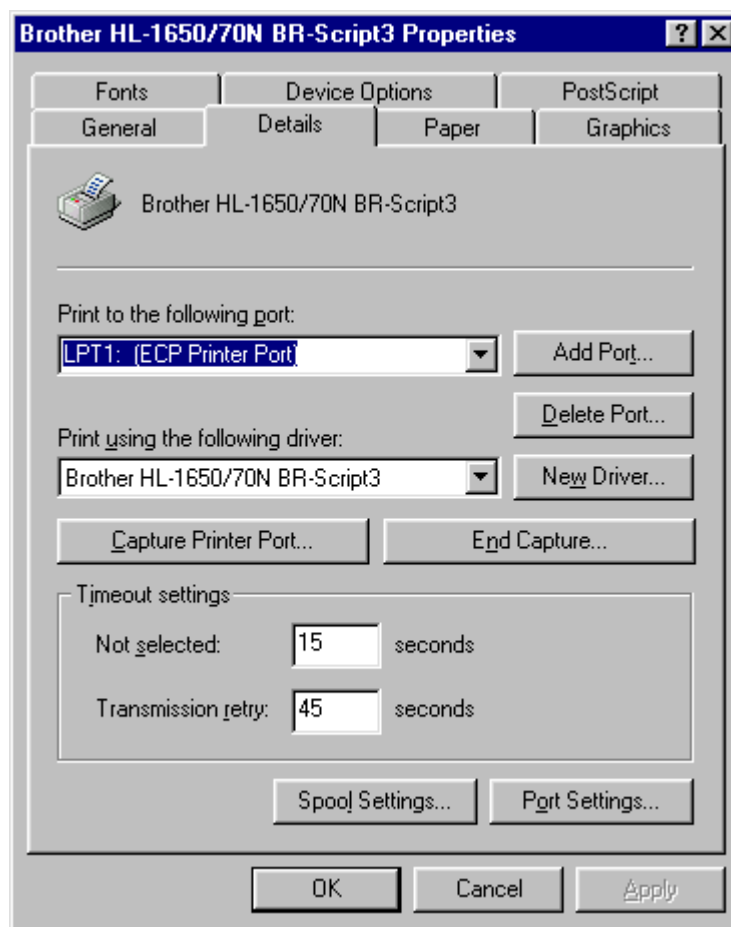


## ***Features in the PS printer driver (Windows users only)***

For more detailed information, please see the on-line Help in the printer driver.

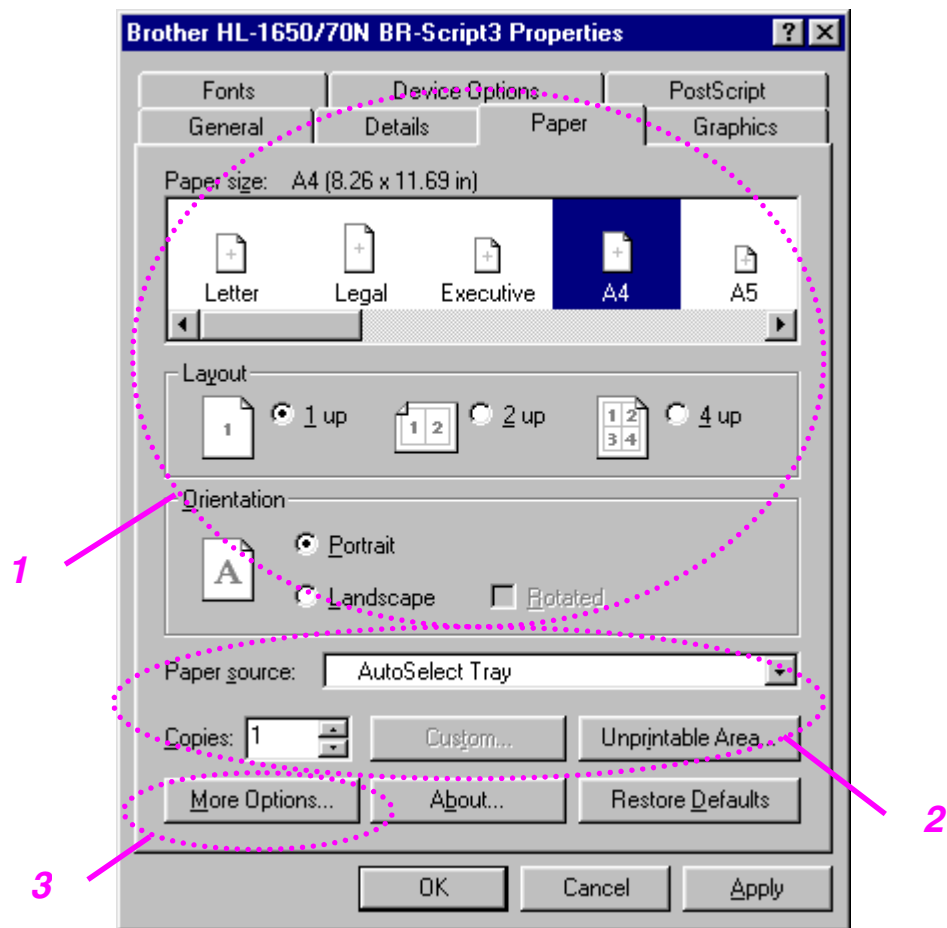
### ***❖ Details tab***

Select the port where your printer is connected or the path to the network printer you are using.  
Select the printer driver that you installed.





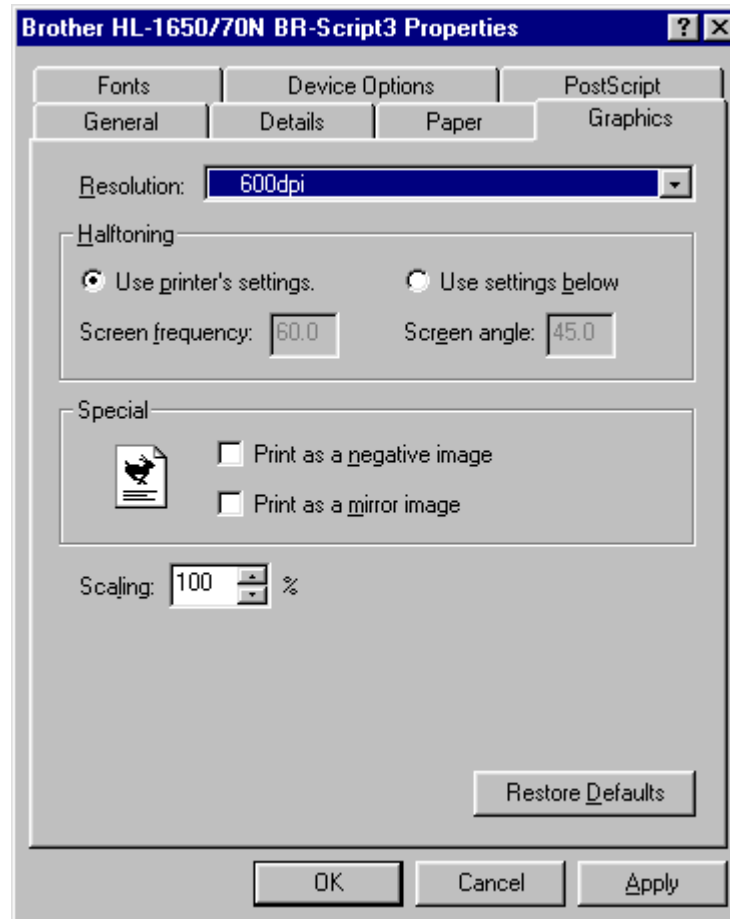
## ❖ Paper tab



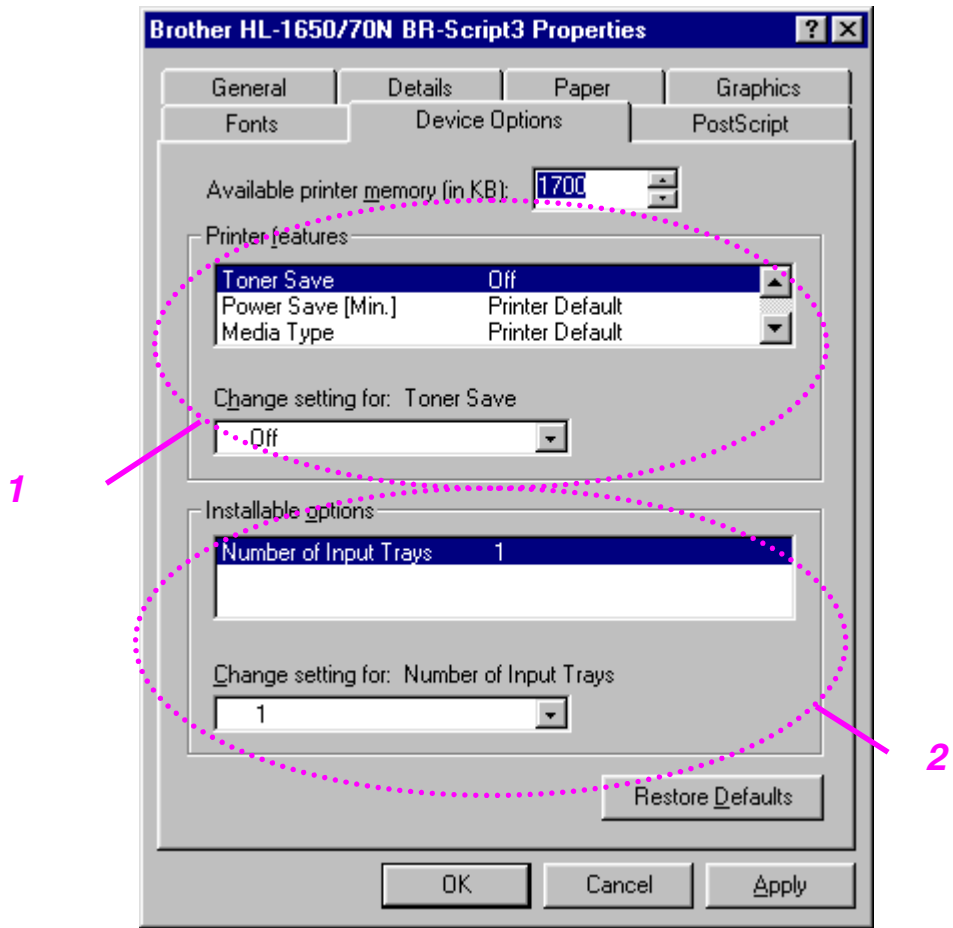
- 1 Select the Paper size, Multi-page, Orientation, etc..
- 2 Select the Paper source.
- 3 Select the Duplex function.

## ❖ Graphics

Set the print quality, etc..



## ❖ Device Options



- 1 You can change settings by clicking the setting and then selecting a new value in the Change Settings box.

Toner Save Mode

Sleep Mode

Media Type

HRC setting

Job spooling (You need to set the RAM Disk size first. For more information, see Chapter 3.)

- 2 Select the installed options from the list.

## ◆ ***Job Spooling***

You can print a document without sending the data again (except Secure printing) from your PC because the printer will save data that you specify for reprinting.

For more information, see Chapter 3.

- Secure Print :      Print the data with a password

## ***Features in the bonus software (Windows users only)***

### **◆ Automatic E-mail Printing**

Automatic E-mail printing is used to download e-mail automatically, receive mail at the selected time and print it automatically. You can also set it to select the mail to be printed automatically depending on the sender and the subject of the e-mail.

#### **Search e-mail by the sender and the subject and auto print**

As soon as an e-mail is received, the printer prints it automatically without your having to start the print operation. You can also choose the mail you want to print by having the printer search by sender and subject.

#### **Auto access at the selected time**

You can check incoming e-mail by accessing the server at the time you set.

#### **Several mail users can share a PC**

Usually, it is difficult to share e-mail software between several people on one PC. Automatic E-mail Printing supports multi-users, so several people can use e-mail software on one PC.

#### **You can keep your current e-mail software.**

Even if you use Netscape or Microsoft Internet Mail, you can use Automatic E-mail Printing and get additional functions not supplied in the original e-mail software.

## ***Software for networks***

### **◆ *BRAdmin professional***

BRAdmin professional is a utility for managing your Brother network enabled printers which are running under Windows 95/98/Me, Windows 2000 and Windows NT 4.0 and allows you to easily configure and check the status of your network enabled printer.

### **◆ *Storage Manager***

Brother Storage Manager software can manipulate the printer forms that you may have stored in the internal flash memory.

You can print the fixed form document at any time by operating the control panel.


To make the fixed document to print, you must first write Fonts, Macros or fixed forms to the memory of your printer.

## ◆ ***Network Printer Driver Wizard***


This installer includes the Windows PCL driver and Brother network port driver (LPR and NetBIOS). The administrator should set up the IP address, Gateway, Subnet without BRAdmin Professional before using this software. If the administrator then installs the printer driver and port driver using this software, he can save the file to the File server or send the file via E-mail to users. Then, users just click that file and the printer driver, port driver and IP address, etc., is automatically copied to their PC.

## ***Software installation for Windows computers***

You can install the Software from the supplied CD-ROM as follows:

-  **1.** Insert the CD-ROM into the CD-ROM drive. The opening screen appears automatically.

If the screen does not appear, click Start and choose Run, enter the CD - drive letter and type \START.EXE (for example: D:\START.EXE).

-  **2.** Select the LANGUAGE, and then follow the on-screen instructions. The printer driver will complete the installation.



# ***Software installation for Macintosh computers***

This printer supports Mac OS versions 8.51, 8.6, 9.0 and 9.04.

## ***❖ Apple LaserWriter 8 Driver***

The Apple LaserWriter Driver may have been installed with your system. It is also available at <http://www.apple.com>.

LaserWriter 8 versions 8.6 and 8.7 have been tested for use with this printer.

## ***❖ PostScript Printer Description Files (PPDs)***

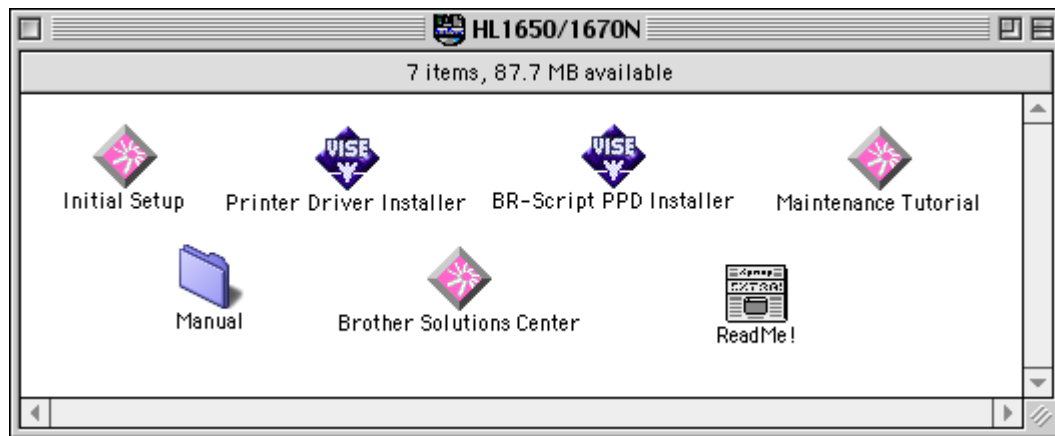
PPDs, in combination with the Apple LaserWriter 8 Driver, access the printer features and allow the computer to communicate with the printer.

An installation program for the PPDs ("BR-Script PPD Installer") is provided on the CD-ROM.

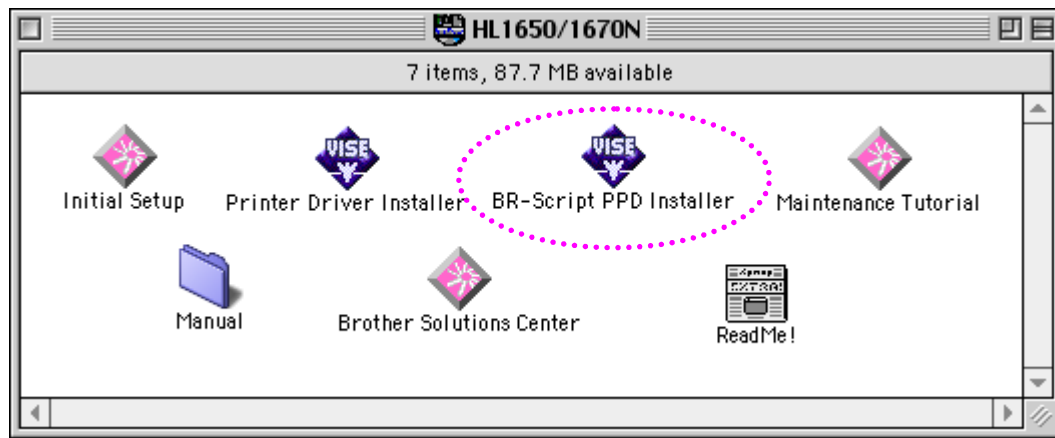
## ❖ Installing the printer driver for Macintosh

**<For Network users with the PS driver>**

- 1. Turn on your Macintosh computer. Insert the CD-ROM into the CD-ROM drive. The following window will appear automatically.



- 2. To install the BR-Script PPD file, click this icon.



- 3. To set up the LaserWriter driver, refer to the Network User's Guide.

**<For USB users with the PCL driver>**

1. Turn on your Macintosh computer. Insert the CD-ROM into the CD-ROM drive. The following window will appear automatically.



2. Double click the Printer Driver Installer icon and then follow the instructions on the screen.
3. Connect the USB interface cable to your Macintosh, and then connect it to the printer.
4. Open the Chooser from the Apple Menu on the Macintosh, and click the Brother HL-1650/1670N icon and highlight it.

# ***Automatic Emulation Selection***

---

This printer has an Automatic emulation selection function. When the printer receives data from the computer, it automatically selects the emulation mode. This function has been factory set to ON.

The printer can select among the following emulation combinations:

<b><i>EPSON (default)</i></b>	<b><i>IBM</i></b>
HP LaserJet	HP LaserJet
BR-Script 3	BR-Script 3
EPSON FX-850	IBM Proprinter XL

You can select the emulation mode manually in the EMULATION menu in SETUP mode by using the control panel. [For more information, see Chapter 3.](#)

## Note

---

When you use the Automatic emulation selection, note the following:

- The EPSON or IBM emulation mode priority must be selected, because the printer cannot distinguish between them. Since the factory setting is the EPSON emulation mode, to use the IBM emulation mode you may need to select it in the EMULATION menu in SETUP mode using the control panel.
  - Try this function with your application software or network server. If the function does not work properly, either select the required emulation mode manually using the printer panel switches or use the emulation selection commands from your software.
-

# ***Automatic Interface Selection***

---

This printer has an Automatic interface selection function. When the printer receives data from the computer, it automatically selects the interface that is appropriate.

When you use the parallel interface, you can turn the high-speed and bi-directional parallel communications on or off in the Parallel menu in INTERFACE mode using the control panel. [For more information, see Chapter 3](#). Since the automatic interface selection mode has been factory set to ON, simply connect the interface cable to the printer.

If a Network board (Brother NC-4100h) has been installed, select NETWORK mode by using the control panel.

If you constantly use only one interface, we recommend that you select that interface in the interface mode. The printer allocates all of the input buffer to that interface if only one interface is selected.

# ***Printer Settings***

---

## ***Factory settings***

The printer settings have been set at the factory before shipment. They are called “Factory settings.” Although you can operate the printer with these factory settings unchanged, you can tailor the printer with user settings.

Please see “List of Factory settings” in Chapter 3.

### ***Note***

---

Changing the user settings does not affect factory settings. You cannot modify the preset factory settings.

---

The changed user settings can be restored to the factory default settings with the RESET MENU mode. For more information, see Chapter 3.

# ***CHAPTER 3***

## ***CONTROL PANEL***

---



# Control panel

---



**Fig. 3-1**

# Switches

---

You can control the basic printer operations and change various printer settings with 7 Control panel switches (**Go**, **Job Cancel**, **Reprint**, **+**, **-**, **Set**, **Back**).

	Key	Function
1	<b>Go</b>	Exit from the Control panel menu, Reprint settings and Error messages. Pause / Continue printing.
2	<b>Job Cancel</b>	Stop and cancel the printer operation in progress.
3	<b>Reprint</b>	Select the Reprint menu.
4	<b>+</b>	Move forward and backward through Menus.
	<b>-</b>	Move forward and backward through selectable options.
5	<b>Set</b>	Select the Control panel menu. Set the selected menus and settings.
6	<b>Back</b>	Go back one level in the menu structure.

## Go switch

The panel indications can be changed from the current status (MENU, ERROR and REPRINT settings) by pressing the **Go** switch once. For ERROR indications, the panel changes only when the error is cleared.

You can PAUSE printing with the **Go** switch. Pressing the **Go** switch again restarts the print job and clears the PAUSE. During PAUSE, the printer is in the off-line state.

### Note

---

If you do not wish to print the remaining data when the printer is in PAUSE, you can cancel the job by pressing the **Job Cancel** switch. Press the **Go** switch to clear the PAUSE and return the printer to the “Ready” state.

---

## ***Job Cancel switch***

You can cancel the processing or printing of data with the **Job Cancel** switch. The display shows "JOB CANCELLING" until cancelling is completed. After cancelling the job, the printer returns to the "READY" state.

When the printer is in any state except receiving data or printing, the display shows "NO DATA!!!" and you cannot cancel the job.



## Reprint switch

If you want to reprint a document that has just been printed, you can reprint it by pressing the **Reprint** switch. Also, if you have created a document that you wish to share with colleagues, simply spool the document to a non-secure area of the printer. This document can then be re-printed by anyone who is on the network or at the printer Control panel.

You can use the reprint function when the printer is **READY** or in the Settings menu.

When you want to print **SECURE** data, we recommend RAM enhancement to enable the reprint using the RAM function.

When you use RAM to reprint;

-  **1.** Press the **Set** switch on the Control panel to exit from the **READY** status and select **RAMDISK SIZE** in the **SETUP** mode.
-  **2.** The default RAM size is 0MB. Press the **+** switch to increase the reprint RAM size in 1MB steps.

### Note

---

When you increase the RAM size for secure printing, the work area of the printer is decreased and the printer performance will be reduced. When you store the data in RAM, the data will be deleted when the printer power is turned off.

---

We also recommend adding additional RAM when you want to be able to print a large amount of secure data. ([See RAM expansion in Chapter 4.](#))

## ❖ *Reprinting the last JOB*

You can reprint the last print job without sending it from the computer again.

### **Note**

- 
- When REPRINT is set to Off using the control panel and you press the **Reprint** switch, the LCD briefly shows “NO DATA STORED.”
  - If you want to cancel reprinting, press the **Job Cancel** switch.
  - If the printer does not have enough memory to spool the print job, it prints only the last page.
  - Pressing the – or + switch makes the number of reprint copies decrease or increase. You can select between COPIES= 1 and COPIES=999.
- 

For more information about the settings in the printer driver, see “[Job Spooling](#)” in Chapter 2.

## ◆ Reprint the last JOB 3 times

- ➡ 1. Set the REPRINT menu ON with SETUP mode using the Control panel.

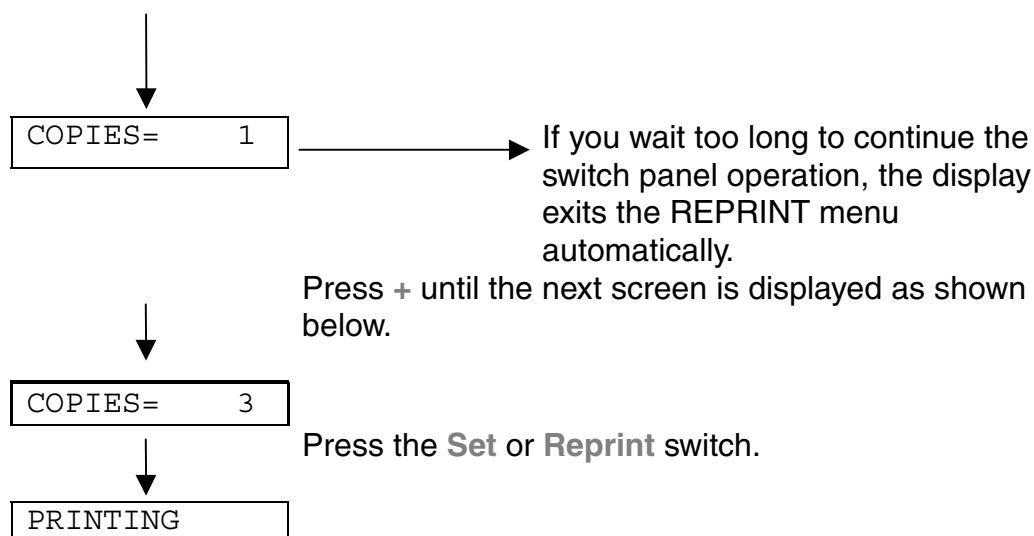
### Note

---

If you print using this printer's own driver, the settings for Job Spooling in the printer driver will take priority over the settings made in the Control panel. For more information, see [“Job Spooling” in Chapter 2](#).

---

- ➡ 2. Press the **Reprint** switch.



### Note

---

If you want to reprint the data and have pressed the **Go** switch, the display shows “PRESS SET TO PRINT”. Press **Set** to start the reprint job or press the **Go** switch to cancel the reprint job.

---

## ❖ **Printing *SECURE* data**

Secure documents are password protected and only those people that know the password will be able to print the document. The printer will not print the document when you send it for printing; to print the document you must use the control panel of the printer.

When you want to delete the spooled data, you can carry out this operation on the control panel.

### **Note**

- 
- If there is data in the job information that cannot be displayed on the LCD, the display shows “?”.
  - You can also reprint the job using the supplied printer driver.
- 

For more information about the settings in the printer driver, see “[Job Spooling](#)” in [Chapter 2](#).



## Operations for printing secure data

Press the **Reprint** switch.

→ If there is no data.

NO DATA STORED

LAST JOB



Press **+** or **-**

SECURE



Press **Set**.

USER \*\*\*\*\*



Press **+** or **-** to select the user name.  
Press **Set** to set the user name.

JOB \*\*\*\*\*



Press **+** or **-** to select the job.  
Press the **Set** switch to set the job.

PASS NO.=0000



Input your password.  
Press the **Set** switch to set the password.

COPIES= 1

The printer will exit this menu after a timeout period.



Press the **Set** or **Reprint** switch.  
If you press the **Go** switch, the display shows "PRESS SET TO PRINT".

PRINTING

◆ ***When there is no reprint data in memory***

If the printer does not have any data in buffer memory and you press the **Reprint** switch, the LCD briefly shows "NO DATA STORED."

◆ ***When you cancel the reprint job***

Pressing the **Job Cancel** switch allows you to cancel the reprint job. The **Job Cancel** switch also allows you to cancel a paused reprint job.

## ***+ / – switch***

If you press the + or – switch when the printer is the on-line state (READY), it goes off-line and the LCD displays the menu.

### ***❖ To display menus in the current mode***

If you press the + or – switch when the printer is in the on-line state (READY), it goes off-line and the LCD displays the current mode.

You can enter other menus in the current mode by pressing the + or – switch. Pressing the + or – switch allows you to scroll forward or backward through the menus and settings on the display. Press or hold the switch until the display shows the desired item.

### ***❖ To set numbers***

There are two ways to input numbers. You can press the + or – switch to scroll up or down to set one number at a time, or you can hold down the + or – switch to scroll faster. When you see the number you want, press the **Set** switch.

## **Set switch**

If you press the **Set** switch when the printer is in the on-line state (READY), it goes off-line and the LCD displays the current mode.

Pressing the **Set** switch allows you to set the selected menu or the default number. After changing the menu or number, an asterisk appears briefly on the right side of the message and the mode returns to the previous menu.

## Back switch

If you press the **Back** switch when the printer is in the on-line state (READY), it goes off-line and the LCD goes to the menu display.

Pressing the **Back** switch allows you to return to the previous level from the current menu level. The **Back** switch also allows you to select the previous digit while inputting numbers. When the leftmost digit is selected, the **Back** switch allows you to go up one level in the menu. When a menu or number without an asterisk (**Set** switch not pressed) is selected, the **Back** switch allows you to return to the previous menu level with the original setting unchanged.

### Note

---

When you press the **Set** switch to select a setting, an asterisk appears briefly at the end of the display. Since the asterisk indicates the selection, you can easily find the current settings as you scroll through the display.

---

# LED

---

The lamps light or blink to indicate the current printer status.

## ❖ **DATA - Orange LED**

LED indication	Meaning
On	Data remains in the printer buffer.
Blinking	Receiving or processing data
Off	No remaining data

## ***LCD display***

---

The display shows the current printer status. When you use the control panel switches, the display will change.

When you take the printer off-line, the display changes to show the selected emulation.

If any problems occur, the display shows the corresponding operator call, error, or service call message to prompt you to take an action. **For more information about these messages, see “TROUBLESHOOTING” in Chapter 6.**

## ***BACK LIGHTS***

Off	The printer is in sleep status.
Green (General)	Warming up
	Ready to print
	Printing
Red (Error)	A problem has occurred with the printer.
Orange (Setting)	Setting Menu
	Setting reprint times
	Pause



## ❖ *Printer Status Messages*

The following table shows the printer status messages that are displayed during normal operation:

Printer Status Message	Meaning
READY	Ready to print.
PROCESSING	Busy processing data.
SLEEP	In sleep status (power save mode).
PRINTING	Printing.
SELF TEST	Performing self-diagnostics.
PAUSE	The printer has suspended feeding forms. Pressing the <b>Go</b> switch resumes form feed.
NOW INITIALIZING	The printer is setting up.
WARMING UP	The printer is warming up.
MEMORY SIZE=XX MB	This printer has XX MB memory.
JOB CANCELLING	Cancelling the job.
RESOLUTION ADAPT	Printing with reduced resolution.
PRESS SET TO PRINT	Press the <b>Set</b> switch to start printing.
RESET TO FACTORY SETTING	The printer setting returns to the factory setting.

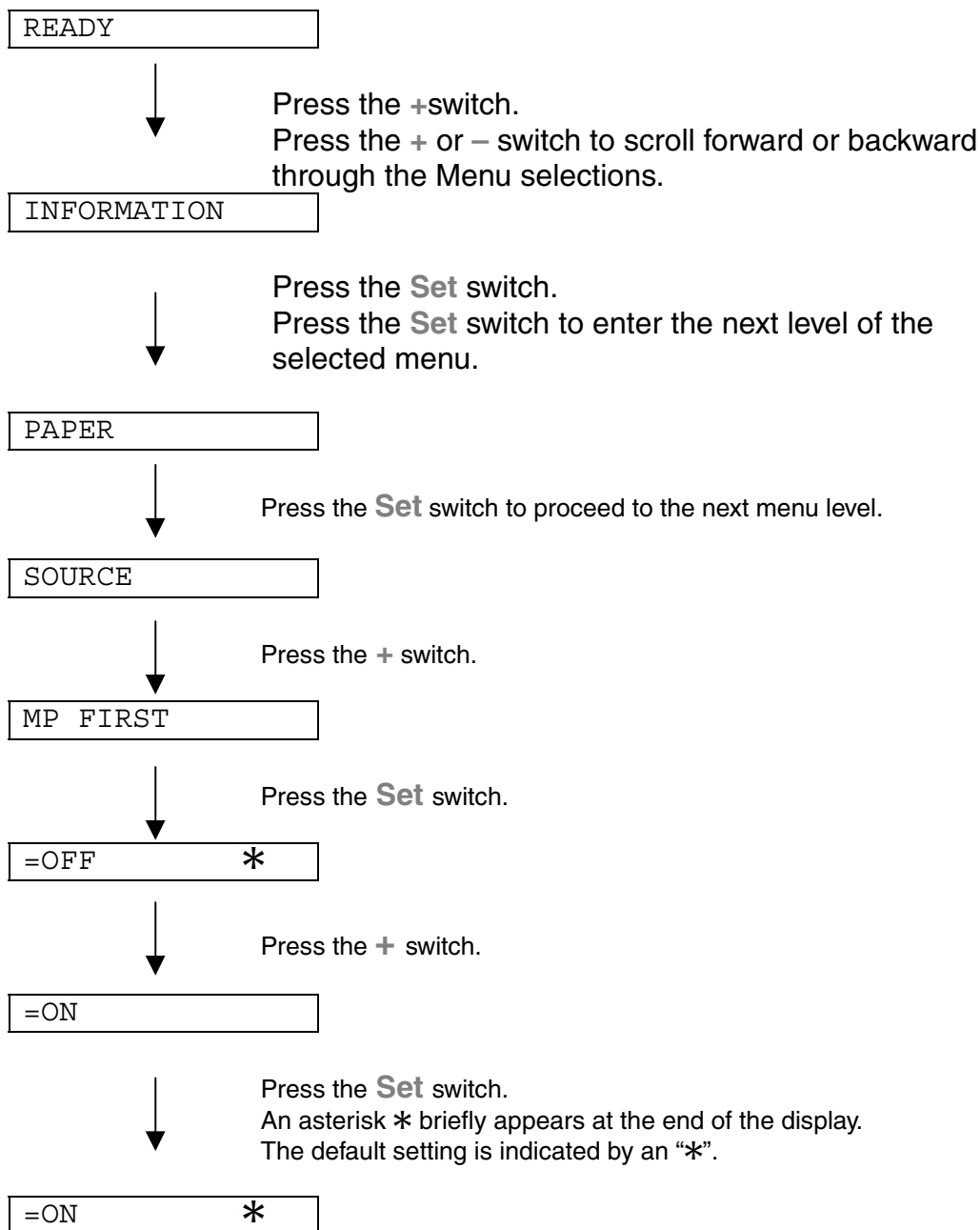
## ***How to use the Control panel***

When you operate the **Menu** switches (+&–, **Set**, **Back**), remember the following basic steps:

- ◆ If no control panel operations are performed for 30 seconds, the LCD automatically returns to READY.
- ◆ When you press the **Set** switch to select a setting, an asterisk briefly appears at the end of display. After that, the display returns to the previous menu level.
- ◆ After changing the status or number, pressing the **Back** switch before pressing the **Set** switch will cause the display to return to the previous menu with the original setting unchanged.
- ◆ When you input numbers, you can do it by scrolling through the available range (000 to 999) or by setting digits one at a time. When setting digits one at a time, the blinking digit is the changeable digit.
- ◆ When you operate the + / –, **Set**, **Back** switches, remember the following basic steps.

◆ **For example : When you want to turn the MP FIRST setting ON**

Choose this setting to load paper from the Multi-purpose tray first.



## ***Control Panel setting menu***

We named the Paper tray in this manual and LCD panel as shown below:

Upper paper tray	Tray 1
Multi-purpose tray	MP tray
Optional lower tray	Tray 2

There are 8 modes. For more information about the selections available for each mode, refer to the pages listed below.

- ◆ **INFORMATION**  
*For more information, see 3-21*
- ◆ **PAPER**  
*For more information, see 3-22*
- ◆ **QUALITY**  
*For more information, see 3-22*
- ◆ **SETUP**  
*For more information, see 3-23*
- ◆ **PRINT MENU**  
*For more information, see 3-24*
- ◆ **NETWORK**  
*For more information, see 3-30*
- ◆ **INTERFACE**  
*For more information, see 3-31*
- ◆ **RESET MENU**  
*For more information, see 3-32*

## ❖ INFORMATION

Setting Menu	Description	
PRINT SETTINGS	Print the Configuration page.	
PRINT TEST	Print the test page.	
PRINT DEMO	Print the demonstration.	
PRINT FILE LIST	Print the file list.	
PRINT FONTS	Print the font list and samples.	
	Sub-Setting Menu	Description
VERSION	SER.NO=#####	Printer serial number.
	ROM VER=####	ROM firmware version (only Network users)
	ROM DATE ##/##/##	ROM date (only Network users)
	NET VER=####	Network firmware version
	NET DATE ##/##/##	Network date
	RAM SIZE=###MB	The size of memory in this printer.
MAINTENANCE	PAGE COUNTER	=#####
	REMAIN DRUM	=#####
	REMAIN PF KIT1	=#####
	REMAIN PF KIT2	=#####
	REMAIN FUSER	=#####
	REMAIN LASER	=#####

❖ **PAPER**

Setting Menu	Description
<b>SOURCE</b>	=AUTO / MP TRAY / TRAY1 / TRAY2
<b>MP FIRST</b>	=OFF/ON Feed paper from the MP tray first.
<b>MANUAL FEED</b>	=OFF/ON
<b>DUPLEX</b>	=OFF/ON(LONG BIND)/ON(SHORT BIND)

❖ **QUALITY**

Setting Menu	Description
<b>RESOLUTION</b>	=300/600/HQ1200 You can choose a print resolution of 300, 600 or HQ1200.
<b>HRC</b>	=OFF/LIGHT/MEDIUM/DARK HRC: High Resolution Control offers improved print quality of characters and graphics that conventional laser printers cannot attain with a resolution of 300 or 600 dpi.
<b>TONER SAVE</b>	=OFF/ON
<b>DENSITY</b>	=-6:0:6 Increase or decrease the print density.

## ❖ SETUP

Setting Menu	Description	
LANUGAGE	= ENGLISH /FRANÇAIS /...	
LCD DENSITY	=0/1/2	
POWER SAVE TIME	=1:99MIN.	
AUTO CONTINUE	=OFF/ON	
LOCK PANEL	=OFF/ON Turn on/off lock panel function.	
	PASS NO.=###	
RERRINT	=ON/OFF	
PAGE PROTECTION	PROTECT = AUTO	AUTO, OFF, LETTER, A4 OR LEGAL
EMULATION	=AUTO (EPSON)/AUTO(IBM)/ HP LASERJET/....	
KEEP PCL	=OFF/ON	
RAMDISK SIZE	=0/1/2...MB	RESTART?
DELETE STORAGE	Delete the internal flash memory print data.	
	Sub-Setting Menu	Description
	SECURE FILE	Select the User name, Job name and password.
	DATA ID	=####
	MACRO ID	=####
	FONT ID	=####
	FORMAT	OK?

## ❖ **PRINT MENU**

Setting Menu	Description	
<b>MEDIA TYPE</b>	=PLAIN PAPER/TRANSPARENCIES/THIN PAPER/THICK PAPER/THICKER PAPER/BOND PAPER	
<b>PAPER</b>	Set cut sheet paper size to LETTER, LEGAL, A4, A5, A6, B5, B6, EXECUTIVE, COM10, MONARCH, C5 and DL	
<b>COPIES</b>	=1:999 Shows the number of printed pages.	
<b>ORIENTATION</b>	=PORTRAIT/LANDSCAPE This printer can print pages in portrait or landscape orientation.	
<b>PRINT POSITION</b>	This printer can be adjusted to correct the page format.	
	Sub-Setting Menu	Description
	<b>X OFFSET=0</b>	Move the print start position (at the upper left corner of pages) horizontally up to –500 (left) to +500 (right) dots in 300 dpi units.
	<b>Y OFFSET=0</b>	Move the print start position (at the upper left corner of pages) vertically up to –500 (up) to +500 (down) dots in 300 dpi units.
<b>AUTO FF=OFF</b>	=OFF/1:5:99 (sec) Allows you to print the remaining data without pressing the <b>Go</b> switch.	
<b>FF SUPPRESS</b>	=OFF/ON Turn on/off the form feed suppress function.	



❖ **PRINT MENU (continued)**

Setting Menu	Description	
HP LASERJET	FONT NO.	=I0000:?????
	FONT PITCH/POINT	=???.
	SYMBOL/CHARACTER SET	PC-8/... Set the symbol set or the character set.
	TABLE PRINT	Print code table.
	AUTO LF=OFF	=OFF/ON ON: CR→CR+LF, OFF: CR→CR
	AUTO CR=OFF	=OFF/ON ON: LF→LF+CR, FF+CR, or VT→VT+CR OFF: LF→LF, FF→FF, or VT→VT
	AUTO WRAP=OFF	=OFF/ON Line feed and carriage return occur when the printer reaches the right margin.
	AUTO SKIP=ON	=ON/OFF line feed and carriage return occur when the printer position reaches the bottom margin.
	LEFT MARGIN	=#### Set the left margin at column 0 to 126 columns at 10 cpi.
	RIGHT MARGIN	=#### Set the right margin at column 10 to 136 columns at 10 cpi.
	TOP MARGIN	=#### Set the top margin at a distance from the top edge of the paper: 0, 0.33, 0.5, 1.0, 1.5 or 2.0" Factory setting=0.5

Setting Menu	Description	
	<b>BOTTOM MARGIN</b>	<b>=####</b> Set the bottom margin at a distance from the bottom edge of the paper: 0, 0.33, 0.5, 1.0, 1.5 or 2.0" Factory setting: 0.33(None-HP), 0.5(HP)
	<b>LINES</b>	<b>=####</b> Set the number of lines per page from 5 to 128 lines.

❖ **PRINT MENU (continued)**

Setting Menu	Description	
EPSON FX-850	FONT NO.	=l0000:?????
	FONT PITCH/POINT	=????.??
	SYMBOL/CHARACTER SET	PC-8/... Set the symbol set or the character set.
	TABLE PRINT	Print code table.
	AUTO LF=OFF	=OFF/ON ON: CR→CR+LF OFF: CR→CR
	AUTO MASK	=OFF/ON
	LEFT MARGIN	=#### Set the left margin at column 0 to 126 columns at 10 cpi.
	RIGHT MARGIN	=#### Set the right margin at column 10 to 136 columns at 10 cpi.
	TOP MARGIN	=#### Set the top margin a distance from the top edge of the paper: 0, 0.33, 0.5, 1.0, 1.5 or 2.0" Factory setting=0.33
	BOTTOM MARGIN	=#### Set the bottom margin a distance from the top edge of the paper: 0, 0.33, 0.5, 1.0, 1.5 or 2.0" Factory setting=0.33
	LINES	=#### Set the number of lines per page from 5 to 128 lines.

## ❖ **PRINT MENU (continued)**

Setting Menu	Description	
IBM PROPRINTER	FONT NO.	=I0000:?????
	FONT PITCH/POINT	=????.??
	SYMBOL/CHARACTER SET	PC-8/... Set the symbol set and the character set.
	TABLE PRINT	Print code table.
	AUTO LF=OFF	=OFF/ON ON: CR→CR+LF, OFF: CR→CR
	AUTO CR=OFF	=OFF/ON
	LEFT MARGIN	=#### Set the left margin at column 0 to 126 columns at 10 cpi.
	RIGHT MARGIN	=#### Set the right margin at column 10 to 136 columns at 10 cpi.
	TOP MARGIN	=#### Set the top margin a distance from the top edge of the paper: 0, 0.33, 0.5, 1.0, 1.5 or 2.0" Factory setting=0.33
	BOTTOM MARGIN	=#### Set the bottom margin a distance from the top edge of the paper: 0, 0.33, 0.5, 1.0, 1.5 or 2.0" Factory setting=0.33
	LINES	=#### Set the number of lines per page from 5 to 128 lines.

❖ **PRINT MENU (continued)**

Setting Menu	Description	
BR-SCRIPT	ERROR PRINT	=OFF/ON
	APT	=OFF/ON  APT: Advanced Photoscale Technology offers photographic fine grayscale on graphics. APT setting is available only at 600 dpi.

## ❖ NETWORK

Setting Menu	Description	
TCP/IP	Sub-Setting Menu	Description
	TCP/IP ENABLE	=ON/OFF
	IP ADDRESS=	###.###.###.###
	SUBNET MASK=	###.###.###.###
	GATEWAY=	###.###.###.###
	IP BOOT TRIES	=#
	IP METHOD	=AUTO/STATIC/RARP/BOOTP/DHCP
NETWARE	NETWARE ENABLE	=ON/OFF
	NET FRAME	=AUTO/8023/ENET/8022/SNAP
APPLETALK	=ON/OFF	
NETBEUI	=ON/OFF	
DLC/LLC	=ON/OFF	
BANYAN	=ON/OFF	
LAT	=ON/OFF	
NETBIOS/IP	=ON/OFF	
ENET	=AUTO/100B-FD/100B-HD/10B-FD/10B-HD	

❖ **INTERFACE**

Setting Menu	Description	
<b>AUTO IF TIME</b>	= 1:5:99 (sec) You must set the timeout period for the auto interface selection.	
<b>INPUT BUFFER</b>	= Level1:5:15 Increase or decrease the input buffer capacity.	RESTART PRINTER?
<b>PARALLEL</b>	When using the parallel interface	
	Sub-setting Menu	Description
	<b>HIGH SPEED</b>	=ON/OFF Turns the high speed parallel communications ON/OFF.
	<b>BI-DIR=ON/OFF</b>	=ON/OFF Turns the bi-directional parallel communications ON/OFF.

## ❖ **RESET MENU**

Setting Menu	Description
<b>RESET PRINTER</b>	Resets the printer and restores all printer settings – including command settings – to settings you have previously made with the control panel switches.
<b>FACTORY RESET</b>	Resets the printer and restores all printer settings – including command settings – to the factory settings. See “List of Factory Settings”.



## ❖ Set IP Address

INFORMATION



Press the + or – switch to select the “NETWORK” menu.

NETWORK



Press the **Set** switch.

TCP/IP



Press the **Set** switch.

TCP/IP ENABLE



Press the + switch.

IP ADDRESS=



Press the **Set** switch.

192.0.0.192 \*



The last number in the digit which you can change is blinking.  
Press the + or – switch to increase or decrease the number.  
Press the **Set** switch to go to next digit.

123.0.0.192



Repeat this until you have set your IP address.

123.45.67.89



Press the **Set** switch to complete the IP address.

123.45.67.89 \*

An asterisk appears at the end of the display.

## ❖ **About Emulation Modes**

This printer has the following emulation modes.

### ◆ **HP LaserJet Mode**

The HP LaserJet mode (or HP mode) is the emulation mode in which this printer emulates the Hewlett-Packard LaserJet laser printer. Many software applications support this type of laser printer. Using this mode will allow your printer to operate at its optimum performance with those applications.

### ◆ **BR-Script 3 Mode**

BR-Script is an original page description language and a PostScript language emulation interpreter. This printer supports level 3. The BR-Script interpreter of this printer enables full and satisfactory control of text and graphics on pages.

Average users will not need extensive knowledge of the PostScript language. However, if you want to obtain technical information about PostScript commands, see the following commercial manuals:

- Adobe Systems Incorporated. PostScript Language Reference Manual, 2nd Edition. Menlo Park: Addison-Wesley Publishing Company, Inc., 1990.
- Adobe Systems Incorporated. PostScript Language Program Design. Menlo Park: Addison-Wesley Publishing Company, Inc., 1988.
- Adobe Systems Incorporated. PostScript Language Reference Manual. Menlo Park: Addison-Wesley Publishing Company, Inc., 1985.
- Adobe Systems Incorporated. PostScript Language Tutorial and Cookbook. Menlo Park: Addison-Wesley Publishing Company, Inc., 1985.
- Adobe Systems Incorporated. PostScript Language Reference Manual, third Edition. Addison-Wesley Longman, Inc., 1999.

◆ ***EPSON FX-850 and IBM Proprinter XL Mode***

The EPSON FX-850 and IBM Proprinter XL modes are the emulation modes that this printer emulates to meet the industry-standard for dot matrix printers of their respective manufacturers. Some applications support these dot matrix printer emulations. Use these emulation modes for optimum performance when printing from those types of applications.

## ❖ *List of Factory settings*

The following table shows the initial factory default settings.

### **Note**

- 
- The settings are subject to the emulation mode. Effective modes are indicated in parentheses in the following table.
  - The following settings cannot be restored to the factory settings with the RESET menu in the "FACTORY SETTINGS" mode: INTERFACE MODE, HRC SETTING, PAGE PROTECTION, SCALABLE FONT, LOCK PANEL, PAGE COUNTER and local language for display messages.
  - The COPY setting is always restored to the factory setting when the printer is turned off and on again.
  - It is not possible to reset NETWORK setting on the Control panel. If you wish to reset the print server back to its default factory settings (resetting all information such as the password and IP address information) hold down the Network Test Button of the Network board (NC-4100h) for more than 5 seconds.
-

MODE	MENU	Factory Setting
PAPER	SOURCE	=AUTO
	MP FIRST	=OFF
	MP SIZE=	=A4/LTR
	MANUAL FEED	=OFF
	DUPLEX	=OFF
QUALITY	RESOLUTION	=600
	HRC	=MEDIUM
	TONER SAVE	=OFF
	DENSITY	=0
SETUP	LANGUAGE	=ENGLISH
	LCD DENSITY	=0
	POWER SAVE TIME	=5 MIN.
	AUTO CONTINUE	=OFF
	LOCK PANEL	=OFF
	REPRINT	=ON
	EMULATION	=AUTO (EPSON)
	KEEP PCL	=OFF